

SF
601
A5
v. 28
pt. 2
cop. 2

American Veterinary Medicine
Association
Journal
597741
7. 12. 54
v. 28² I

(77)

AMERICAN VETERINARY REVIEW.

APRIL, 1904.

EDITORIAL.

EUROPEAN CHRONICLES.

PARIS, Feb. 15, 1904.

VON BEHRING'S METHOD OF IMMUNIZATION AGAINST TUBERCULOSIS.—The struggle against tuberculosis is about entering upon a new phase, and the final result cannot be much longer a question of doubt, if the method of immunization of von Behring should go into practice. At a meeting in October, 1903, Dr. Lorenz held a highly interesting conference, where the new mode was considered. At first the author gave the history of tuberculosis, which he divided into several periods: first, anterior to 1872, when the disease was considered as syphilis, and known likewise under the generic name of "the French Disease"; a second, up to 1875, relating the studies of Gerlach; a third, the most interesting, because of the demonstration of the tubercle bacillus by Koch in 1882; a fourth, when recovery from the disease was entertained through the use of tuberculin; and finally a fifth, by the discussion held between the advocates of the duality and unicity of animal and human tuberculosis.

Von Behring is a strong advocate of unicity, and all of his efforts are to fight or rather to prevent the disease. At any rate, it is well proven to-day that it is, economically speaking, impossible to fight the disease by the slaughtering of bovines that are affected; all that can be done is to restrain its spreading; and yet, after all, the method which has thus far yielded the best results is that of Bang.

The immunity conferred by von Behring to cattle is purely artificial, and is the result of successive vaccinations. The method consists in injecting into the jugular vein a small quantity of dry culture of bacilli of human tuberculosis, diluted in the physiological solution of chloride of sodium. A second intravenous injection of a dose five times superior to the first is made after four weeks (but by recent recommendations this is made only after four to twelve weeks). The use of the bacillus of human tuberculosis to prepare the culture is certainly an expediency which Prof. Koch would not have resorted to, to immunize cattle against tuberculosis.

* * *

Numerous experiments have been made, under the direction of von Behring, by Prof. Dr. Eber, Schlegel, and Lorenz, special instructions have been given to many learned delegates, and the results have in all cases been a triumph for the new method.

Among the experiments made, Prof. Lorenz recorded the one he had carried out with animals sent to him by von Behring. These animals were immunized, and they resisted the injections of tuberculous products and pure culture of bacilli, while two witnesses were infected by injections of these materials.

Since these experiments were made, others have been carried out very extensively, in Bavaria, in Hungary, and other places, on farms which were positively contaminated with tuberculosis. The results have always been the same. All the young cattle thus immunized, proved upon slaughter to have been immune from the disease; they all grew well, fattened easily and quickly. It is a method which now imposes itself.

Von Behring recommends the vaccination of young animals only when they are between three weeks and four months old, as at that age they are generally less liable to carry tuberculous lesions. To vaccinate them later, from two years and above, is a process which, resorted to at first, is now rejected. The reason is that the intravenous injections of vaccine promote in animals which have already tuberculous lesions a reaction analogous to

that of ordinary tuberculosis, or even superior—a reaction which does not kill, but, nevertheless, renders success doubtful; although the process of von Behring claims that it may promote the recovery of small tubercular deposits. At any rate, it will be prudent not to proceed with the immunization until after an injection of tuberculin, when working with aged animals belonging to farms positively infected; but with young stock from three weeks to four months old, vaccination can be carried out from the start without resorting to tuberculin.

* * *

The following notice well crowns the work done by von Behring:

“It is announced that the Prussian government has decided upon the early construction of a royal institute against tuberculosis. It will be erected near the city of Marbourg, and will be placed under the direction of von Behring. This is the result of the valuable work done by the future director.”

* * *

MARMORECK'S NEW POLYVALENT SERUM AND “GOURMINE.”—In the month of June of last year, our regretted friend Nocard read a paper before the Société Centrale relating to the new application of the serum of Marmoreck, which hitherto had proven efficacious only in the treatment of anasarca in horses. When the first publications concerning the serum were made it was thought that its use would be beneficial in the treatment of all diseases due to streptococci. Soon, however, Lignières showed that it had not the slightest action in strangles. The pathogeneus germs of strangles and of anasarca were not identical. All these points we have already considered in previous communications. Subsequent to all this, however, Marmoreck has modified his serum; he has made it polyvalent, by injecting his animals with cultures of all the human streptococci he could get, and also with the streptococci of strangles. In this way he has obtained a serum which answers all purposes, not only for anasarca, but for all diseases of similar nature, and of course for strangles. Since I made allusion to these facts in my

February "Chronicle," many veterinarians have resorted to the use of the serum, and have nothing but good results to record—in fact, they were sufficient to allow Nocard to almost consider that a panacea against strangles had been found. In his remarks he concluded: "If for years I have said to you, use the serum of Marmoreck against anasarca, because it is the treatment which gives the best results; but do not use it for strangles, as it would be loss of time and money; to-day the conditions differ; the antistreptococcic serum is obtained by a different method; it is polyvalent, which means that it is active against all types of streptococci. If the trials which have been made are confirmed, veterinary medicine will have deserved well from agriculture, breeding, etc., as of all the diseases of youth in horses, strangles is no doubt the one which causes the heaviest losses."

* * *

The preparation of Marmoreck's new polyvalent serum is not concealed, and what its beneficial effects can be may yet remain unpublished; still whatever laurels they may deserve are not going to be enjoyed quietly. In the *Annales de Medecine Veterinaire de Bruxelles* there is the review of an article the original of which I have not been able to secure, but I believe it is in the *Berliner Thierärztliche Wochenschrift*. The notice refers to a new antistreptococcic and antigourmous serum, which is made at the Serotherapeutic Institute of Hoechst, and is offered to the public under the name of "Gourmine." Its action has been tested on a large number of subjects, and it is said that at the Institute there are now 78 horses which have just been treated with "Gourmine." They are four and five years old. When they reached their destination, some were already diseased. They were placed in two stables and received 50 grammes of serum. No trouble was observed on any of the animals at the point of injection nor was there any general reaction on those which were healthy. But in the sick ones, twenty-four hours after the operation, there was a dropping in the fever and a reduction of the swelling of the lymphatic glands. In from three to five days all the symptoms had disappeared in them, and the disease did

not make its appearance among the healthy ones, although they remained for three months in the stable, surrounded by subjects sick with strangles. Others had made similar experiments in private practice and the general conclusions arrived at are: (1) Gourmine has a specific action on the streptococci of strangles; (2) in all cases of that disease when there exists a pure streptococci infection and when the suppuration of the glands is not too far advanced, Gourmine will always succeed in arresting the disease; (3) the injection of Gourmine into healthy horses has a preventive action against the disease, but it is not yet possible to fix the duration of the immunity thus obtained.

Moral: Whether it is with the polyvalent serum of Marmoreck or with Gourmine, it seems pretty certain that, after all, veterinarians can now readily get the best of that horrid disease, strangles.

* * *

TINCTURE OF ARNICA is, as we all know, a compound extensively recommended and used, not only in human but also in veterinary surgery, and many of us remember the days when it constituted one of the fundamental applications in cases of bruises, sprains, etc. Does it enjoy the same reputation? Perhaps; but whether it does or not, it is deserving of all the good qualities and effects that are claimed for it. I do not know if any serious blame has been attached to it, or if any accident has ever occurred from its use, yet at one meeting of the Société de Médecine and de Chirurgie Pratiques, at which I was present, a case was recorded which is not without interest for those who use tincture of arnica *ad nauseum*. The case was this: An old lady fell down, hurt and scratched her face on the sidewalk, and when she returned home swabbed her face with a dilution of tincture of arnica, which she applied at intervals for several hours. During the night a swelling took place around her nose, it increased, spread to her eyes, lips, and the whole of the face; she had all the appearances of an erysipelatous manifestation. Indeed, the whole face was swollen and red; there was

considerable swelling of the eye-lids, which kept the eyes closed; the lips were thick, and there were little blisters here and there. Fortunately the case looked worse than it was; it was a simple pseudo-erysipelatous dermatitis, which subsided without any trouble in less than a week. Similar accidents seem to have been entirely unknown, and if the internal administration of decoctions of arnica have been followed by serious accidents, the external use of the tincture has heretofore been free from any danger. Yet, if it has proven generally harmless, it can be injurious, as this case shows, and still it seems to be agreed that it is invariably useless.

It has seemed to me a rather interesting point. If we cannot accept the statement that arnica has not the properties claimed for it when used externally, if it is invariably useless, we at least can bear in mind that complications, even of a local nature, can occur, although the presence of the coat of hair which protects the skin of our patients may render this accident rather doubtful.

* * *

PROF. DIECKERHOFF'S DEATH.—This distinguished veterinarian, of the Superior Veterinary School of Berlin, died in December of arterio-sclerosis, as already told in the REVIEW for February. Born in 1835, after brilliant study at the Berlin school, he entered private practice, in which he remained until 1870, when Gerlach, who was then director at Berlin, called him to fill the chair of clinic. After the death of Gerlach, Prof. Dieckerhoff went rapidly to the front, and soon found himself at the head of the two largest clinics in Germany. But the work was too heavy, and the department had to be divided. To Prof. Möller the surgical clinic was given; Dieckerhoff kept the medical. During twenty-eight years he took a great part in the veterinary sanitary organization of Germany. He published several works, among which are: Special pathology and therapeutics, veterinary legal medicine, history of rinderpest, and typhoid fever of the horse. Dieckerhoff was essentially a veterinarian; he had considerable experience, was a superior diag-

nostician, was very popular as a teacher, and was much liked by his colleagues.

* * *

THE NOCARD SUBSCRIPTION.—I have already acknowledged the contributions to the Nocard Monument Subscription through the checks I have received from the faculty of the New York-American Veterinary College, the Missouri Valley Veterinary Association, the Michigan State Veterinary Medical Association, the Massachusetts Veterinary Association, and from our old friend, Dr. Wm. Dougherty. I herewith renew my thanks, and those of the Committee. I have received a communication from Dr. Kelly and from Dr. Mohler calling also for funds. I would respectfully suggest that the collection be pushed a little, if Americans will not allow other nationalities to take the lead in the expression of their appreciation of their departed *confrère*.

A. L.

THE ST. LOUIS MEETING OF THE A. V. M. A.

Arrangements are well under way for the forty-first annual meeting of our national (or more properly, international) veterinary association, which will take place at St. Louis, Mo., Aug. 16, 17, 18, and 19, during the progress of the great Louisiana Purchase Exposition. Dr. Chester Miller, of the Bureau of Animal Industry, is Chairman of the Committee of Arrangements, and he has gone about the organization of his committee in that systematic manner which is certain to bring about its harmonious working. Secretary Repp informs us that the number of volunteer essayists is larger than last year at this time, and everything points to a full and exceptionally valuable programme. An effort is being made to have with us at St. Louis representatives from various Continental governments, invitations having been forwarded through diplomatic channels to the governments of England, Germany, France, Italy, Denmark, Belgium, etc.

It is to be hoped that the local committee of arrangements will this year return to democratic principles in the matter of

entertainment. The REVIEW has held right along that, while the social side of our convention life is most enjoyable and much to be encouraged, entertainment upon the elaborate scale of the past few years will in the end work to the serious detriment of the Association as a scientific body. The pace of the recent past is only possible in large centres where there are many enthusiastic and harmonious members with long purses, and it will take but a short time until the Executive Committee of that organization will find that it is without candidates for the next place of meeting, for the reason that the responsibility and expense which go with the invitation are greater than most veterinary localities are willing to assume. Therefore, we trust that the present committee will have the courage to depart from the history of the past few meetings in that they will eliminate all expensive entertainment. This year this can be done with much grace, because it is already provided by the Exposition. Time spent on the perfection of the arrangements for the hall in which the convention is to be held, (especially as to acoustic advantages) the clinic, hotel and railroad facilities will be of much more service to the Association, and will be more appreciated by the members who have the interests of the Association at heart.

There seems to exist this year a concatenation of circumstances which should ensure the largest and best meeting of the American Veterinary Medical Association which has been held in her history. First of all, the condition of the individual members from the business standpoint; reports from all points indicate that the general prosperity of the country and the value of live-stock have made the returns to the veterinarian quite liberal, and hence there is always more inclination to lay aside the burdens of practice for the profits and pleasures of a week's vacation at the meeting of this Association. Second, there has never been a time when more weighty questions were pressing for solution than at present. The ever uppermost problem of tuberculosis has passed into its fifth period, as explained in Prof. Liautard's "Chronicles" this month; that is, the question of

preventive inoculation is on trial, and, while von Behring and others are making statistical history in Europe, Pearson and Gilliland are conducting experiments in Pennsylvania, and it is to be hoped they may be sufficiently far advanced by the summer to communicate their experience to the Association at St. Louis. And it may be possible for the Chief of the Bureau of Animal Industry to carry the subject of the unicity of the tubercle bacillus further through an additional year's experience, and more thoroughly establish his Ottawa contention that bovine tuberculosis is transmissible to man. Aside from the "white plague," Texas fever, with which so much has been accomplished, and hog cholera, which is yet in need of much experimental work to perfect a serum that can be more confidently relied upon; and so on *ad infinitum*. In the realm of practice we have many diseases which are calling for investigation and interchange of ideas and experiences. It is a professional embarrassment that we know so little of that fatal and common affection of horses, azoturia—either in its pathology or its treatment. While that formerly fatal affection of milk cows, parturient apoplexy, has lost its worst feature in a lessened mortality through a happy system of local treatment, still the true nature of the disease cannot be accurately stated. In a discussion before the Pennsylvania Association in March it was suggested that the organism which gave rise to the toxæmia was possibly an anærobe resident of the udder and that the injection of oxygen or oxygen-bearing substances into the gland resulted in the destruction of the microbe and the cessation of the proliferation of toxins. The great class of diseases which Nocard has grouped together as Pasteurellas are also worthy of the earnest thought of such a convention, while osteo-porosis is as little understood as the flexible subject of rheumatism. Then the clinic it is hoped will be improved on, and, if we may suggest, it would appear that for the national meeting one based upon the lines of the Ottawa clinic is most suitable. St. Louis being one of the central points of the Bureau of Animal Industry, a pathological exhibit, such as were held at Omaha in 1898 and at New York in 1899,

would be most instructive to those members whose opportunities debar them from witnessing such interesting lesions as are found by the Bureau's agents in the great abattoirs of the country.

We trust that the veterinarians of the United States and Canada will lay aside their usual duties for this week in August and make the trip to St. Louis, where they will not only be participants in the stirring events of the American Veterinary Medical Association, but where they can witness one of the great events of future history—the exposition of the evidences of the progress of the world.

THE AUTOMOBILE DISCREDITED BY ITS FRIENDS.

Mechanical wagons, called by whatever name fancy has dictated, have arrived at a critical period of their existence. For the past six or eight years public attention has been attracted to them largely through their novelty and the sweeping assertions and predictions of manufacturers and faddish newspapers, who gave the date of the disappearance of the horse from the face of the earth with a precision almost suggestive of second sight, and heralded the information that “orders” for machines were two years in advance of the manufacturers’ capacity to turn them out. The machines demonstrated their capacity to travel very rapidly, not only upon the tracks, but in our streets and parks, with a reckless disregard of life and limb that would not have been tolerated from any other source. The time has now arrived, however, when the results of the generous and expensive trials given to all the various kinds of automobiles by many representative business houses of the large cities, must be shown through their more general adoption or their rejection. Some months ago the REVIEW indicated the trend of sentiment along this line by recording a number of instances where the horseless carriage had been discarded by large business firms in New York City on account of unreliability and unsatisfactory service. We could add case after case where physicians, private

families, business houses, etc., have cast them aside and resumed horse-power since that article was written. The newspaper which did most, not only to push the fanatical claims of the automobile manufacturers, but to discourage the horse industry—despite its great patronage from that source—was the New York *Herald* (which we once suggested should have its name changed to the *Automobile Gazette*). When such an admission as is contained in the following article from its issue of March 20, is taken as a truthful expression of the automobile situation in New York to-day, the attitude of the REVIEW in dealing with this question for the past few years seems almost prophetic :

“As evidence of the comparative merits of motor cars and horses for light delivery work and heavy trucking an order placed last week by the new Fourteenth Street Store, of which Henry Siegel is at the head, will probably carry more weight among practical business men than all the short special trials that have been or may be made by automobile manufacturers.

“As everybody knows, the Fourteenth Street Store is a new establishment from the ground up. Starting with new stock in a new building, it has been the purpose of the management to have every feature of the equipment the best from the standpoint of efficiency and economy. When it came to the delivery service, which is one of the most important features of the twentieth century department store, Mr. Siegel and his associates had to choose between horses and motor wagons, and it did not take them long to make their choice.

“After having themselves tried the steam and electric trucks and delivery wagons and having seen a score or more of the leading business houses of New York test all the various types in an experimental way, the new firm turned them down, one and all, and placed an order with Fiss, Doerr & Carroll, the largest dealers in the world, for two hundred and forty horses of the best stamp. One hundred and fifty head are to be of the light delivery type, for quick work on the city and suburban retail dry goods wagons; fifty heavier express horses will be supplied for the furniture wagons and the remaining forty will be heavy draught horses for hauling merchandise from the steamers and cars to the Fourteenth Street Store.

“The order is one of the largest filled by Fiss, Doerr & Carroll since they fitted out the great Barnum & Bailey shows with

three hundred high class draughters about a year ago. It is also one of the most important orders of the year, from the fact that *it indicates the passing of the automobile for practical business purposes in a city where conditions are more favorable than almost anywhere else for the use of motor cars.* [Italics ours.]

"The order is further noteworthy to users of business horses as showing Fiss, Doerr & Carroll's unusual facilities for collecting and distributing high class animals with economy and despatch. Nearly every firm in the trade, not only here but in the West, that could swing a deal of such magnitude, made a bid for the order and Fiss, Doerr & Carroll obtained it only after hot competition."

"VETERINARIAN AND SCHOLAR" is a broad and comprehensive review of veterinary science, the veterinarian, and their future, from the versatile pen of Dr. D. Arthur Hughes, appearing in this number. We announce with enthusiasm that, beginning with this number, Dr. Hughes becomes a regular collaborator of this journal, and, taking his present contribution as a gauge of his calibre and capacity, the profession is to be sincerely congratulated upon his acquisition to the REVIEW staff.

PROF. A. LIAUTARD, senior editor of the REVIEW, has purchased the only right of translation from the European editors of Nocard and Leclainche's work, "Microbian Diseases," and its publication in America will take place shortly.

PREVENTION OF HOG CHOLERA.—A press telegram from Columbia, Mo., states that Dr. R. E. Graham, recently bacteriologist of the Missouri University, has announced that "hog cholera may be prevented." The message then reads in substance: "He has discovered that hogs may be immunized against hog cholera by means of inoculation, after exactly the same manner that cattle on the Missouri agricultural farm are now being rendered immune from Texas fever. Doctor Graham, assisted by Doctor W. R. Shaefer, began in 1901 a system of experiments, and has since then inoculated over 1000 hogs, the work being conducted on herds in all sections of the State, and under varying conditions. A test experiment was made in Boone county on a herd of 100, the hogs being first inoculated with the preventive and then exposed to the disease.—(*Breeder's Gazette.*)

ORIGINAL ARTICLES.

VETERINARIAN AND SCHOLAR.

PRESENT DEMANDS IN VETERINARY MEDICAL TRAINING—
OPENINGS FOR THOROUGHLY TRAINED VETER-
INARIANS IN AMERICA.

BY D. ARTHUR HUGHES, PH. D., D. V. M., CORNELL UNIVERSITY ; GOV-
ERNMENT INSPECTOR, EAST ST. LOUIS, ILL.

There cannot be a better time than this, at the opening of a new volume of the AMERICAN VETERINARY REVIEW, to take a broad outlook upon the needs in veterinary medical training at the present time and to point out the opportunities for veterinarians of the best training in America. Time and again some of the chances for veterinarians have been mentioned by writers. Yet, strangely enough, many of them have not been placed in strong light before young men of natural aptitude for the work. Still less, never if I mistake not, has there been a complete presentation of the demands for the highest success in the various branches of the profession. Men have been too apt to allow their minds to dwell upon evils about them—the amusingly ignorant quack and his quackery—and, their minds thus clouded, to forget the other side of the picture.

If ever there was a day when there were opportunities for highly trained veterinarians, that day is here. The stigma upon this profession, if there is a stigma, is caused by a too low standard of education. That is a false notion, and ludicrous because it is so false, that men whose lives are given to studies in comparative medicine are of necessity inferior in mind. We might as well apply the axe at the root of the tree and say that this groundless opinion is based upon the observation of the public that the veterinarian in this country has not had the amplitude of knowledge demanded of him by his science, that thoroughness of training expected of a professional man, that positive familiarity with the many branches and recent advances

in comparative medicine and biology which it is accustomed to expect of a scientist. A change will come in public opinion when ignorance, always the butt of the satirist, is displaced by knowledge; when the standard of education for admission of members to the profession is raised to cover the advances in modern medicine, when the graduates have a familiarity with, not a few, but all the branches of veterinary science in a degree at least equal to that required in Europe. French, English, and, more particularly, German standards of education have remodelled the universities in this country during the last twenty-five years and made them the pride of the nation. When a similar change comes over the veterinary colleges in America we will have a training suited to American conditions, at least as valuable to us as that of Alfort is to France, Giessen, Dresden and Berlin are to Germany, and the Royal College of Veterinary Surgeons is to the British world. When such a change comes, our graduates will be those of a long and thorough training, proved knowledge and scientific efficiency. It is time that the veterinary profession should be undecided in some things. Plain speaking is likely to bring out the truth. The ungarished truth is that in our training we are lapping far behind Europe. There are not and cannot be any short cuts to a thorough knowledge of veterinary medicine as it is taught and practiced in the old world. If we bemoan the state of things in the profession, the fault is entirely in ourselves. We need a fuller equipment for our work. We need to go over in our preparation every branch of the many branches of the science, conscientiously and faithfully. We must of needs be masters in observation and the record of observations, skilled in the theory of medicine and practiced in clinical medicine, abreast of the times in pathology and bacteriology, adepts in posology and not mere amateurish dabblers in drugs. We must be sterner and more intense students, wider in our reading. We must in our preparation for the study of medicine have a knowledge at least equal to that required in human medicine and in our medical training we must cover the whole field earnestly and consistent-

ly. In this age which is tingling with intellectual activity, when advances in science occur hourly, when there is such zest in research—who are we that we should be so foolish as not to know what is required of us? The standard of our training must be raised. The time required for our training must of needs be longer. The times require it, and the state of the profession demands it.

I. THE EXTENSIVE TRAINING FOR A VETERINARIAN DEMANDED BY THE TIMES.

In a consideration of the educational qualifications requisite for best work in the profession we should speak, first of all, of the preliminary reading which is necessary before a professional course can most profitably be pursued. Courses in veterinary medicine have hitherto been entered upon by men with a natural aptitude for the work, a familiarity with farm animals and a commendable desire to do as well as possible. Many of these men, largely because of their natural aptitude for veterinary work, have had much success in a kind of practice not necessarily conducted very scientifically, nor requiring a burdensome amount of scientific knowledge. Some of these, in default of preliminary training and a super-added inferior scientific education, have kept dipping into scientific books in a desultory fashion whenever they got into difficulty in their cases and have bettered themselves and made a braver showing as professional men in their particular locality, or even before State societies. All praise is due to such men. They are the stronger men in the communities and would be the first to admit that a larger measure of success could have been obtained by a better training. As a result of the hard lessons of experience they would admit that a more extensive course would have helped them and should help those who succeed them. They would admit that deficiencies of preliminary training were a hindrance to them.

I. *Work preparatory to the professional training.*

(a) *Rudimentary.*

Partly from a desire to increase the roll of students, partly because of a creditable purpose to put as many men as possible

into the field of veterinary practice, many "colleges" (save the mark!) we blush to say, have thought it necessary to enroll students upon their books without so much as the requirement from them of a rudimentary education. Though such students have sometimes done fairly well in the limited curriculum through which they passed and perhaps better still in practice, it is beyond question unwise to continue in this privilege. With opportunities so abundant for a drill in the rudimentary studies in public schools within reach of all, this fault is inexcusable. In a profession which professes to be a "learned" profession it is indeed laughable to allow such a thing.

(b) *The sciences.*

The immediate demand in preparation for a first-rate course in veterinary medicine is the mental discipline and knowledge obtainable in the complete four-year course of a well-equipped and high-grade high school or academy. In a shorter time than four years no student can possibly obtain that knowledge of the sciences introductory to the arduous study of medicine, together with the languages, without which he is sadly handicapped in the mastery of medical terminology and in the pursuance of research later; nor in less than four years can he have had the mental discipline which the strict attention to such studies can give him.

In the choice of sciences [preliminary to the study of medicine, and collateral to it, perhaps weight should be placed on mathematics, physics, chemistry, physical geography, botany, vertebrate and invertebrate zoölogy and entomology—all of which are well taught in first-rate high schools and academies. While at first thought it may seem that mathematics is unnecessary, it is well known by educators that the development of the reasoning faculties is in no other way so well brought about except by this study. A close study of physics, and more particularly of optics, acoustics and electricity—which cannot be taken up in a veterinary college—is fundamentally important, inasmuch as without a knowledge of optics the medical student cannot properly understand his laboratory instruments, the compound mi-

croscope and the camera lucida, nor the optical law which governs the use of the eye; without a knowledge of acoustics such a student cannot understand the mechanism of the ear; without a knowledge of electricity he cannot use the instruments of the physiological laboratory wherewith phenomena of the heart, lungs and nervous system are studied. That he should study introductory chemistry before passing to its more extensive study in college, needs no argument. Physical geography will make him acquainted with natural law which is operative in the world, an acquaintance with which will prepare him for a full understanding of veterinary hygiene later. To be versed in botany will give him a knowledge of plants, their classification, growth, nature—efficacy or noxiousness—which will prepare him for the study of organic compounds of plant derivation in materia medica. The study of vertebrate zoölogy is necessary, for it opens his eyes to the system of arrangement of the animal kingdom—of which his animals are a part—and of the relation of all animals to the law of evolution. The study of invertebrate zoölogy and entomology is indispensable, because without the knowledge of these the anatomy of lower fauna cannot be understood, nor can a scholarly knowledge be had of the myriad of parasites which infest farm animals. After a close study of insects and the lower fauna, in even the small entomological laboratory often found in good high schools and academies, the study in the veterinary college of parasites infesting farm animals and causing numerous diseases becomes an enchantment.

(c) *The languages.*

If there is any one point which should be strongly emphasized, it is that those preparing for a medical training must come to the college able to read matter other than that written in English. The French and the Germans have the best veterinary colleges in the world. In their colleges research is keenest and the advances in the science emanate almost entirely from them. In France and Germany the ablest veterinary journals are published; from these countries a large part of the newest knowledge in this science proceeds. Their vet-

erinary colleges are well-endowed national institutions, manned by scientists trained in the best methods of research, alert in all practical questions, working strenuously in pursuit of new knowledge which will solve vexing questions in animal diseases and will make animals of more practical utility. Their scientific papers, usually complete and scientifically perfect in record of demonstration or experiments, are published in their languages in the great French and German scientific magazines. It is, therefore, of paramount importance that a reading knowledge of both French and German be had by the student before he enters upon a veterinary medical training. The veterinary colleges have no time, neither is it their place, to teach these languages. Yet they must require a knowledge of them sufficient that the student may read them readily and turn, at least the gist of foreign scientific papers he is under obligation to read, into English idiom. The necessity of studying French and German is not a bogie, is nothing to be scared about, for two years' training in a good high school in each language will equip a man to read, shortly with ease, anything in French and German scientific literature. Nothing can be more ridiculous than the thought that a scientific veterinary student, with high purposes, can do without these languages: for if he enters upon a piece of research work, if he could look the matter up in French and German scientific literature, the chances are that the work he did and thought new, had been done before and done better, long ago. His time was wasted; his enthusiasm was of no effect; his work was a farce.

The mastery of scientific terminology is the greatest bugbear to the medical student, at least in his first year or two at college. This can be obviated, or rendered easy, by a two years' study of Latin and Greek in the high school. After this study he can trace medical terms to their derivative and can easily remember them and their meaning from Greek or Latin noun or verb from which they are formed. This is of great value, for the mastery of the thousands of medical terms occupies much of the time of the first year at the college.

The ability to express himself admirably in spoken and written speech is the mark of the scholar. Alas ! How few there are in the veterinary profession, as it is to-day, who can do this. Again it must be said that the fault is in a lack of preparation before entering upon the medical training. High school students to-day are studying with relish the English classics—the essayists like Macaulay and Addison and Carlyle ; the orators, like Burke ; the novelists, like George Eliot and Goldsmith. They are becoming imbued with a sense of what is excellent in expression and are learning to couch their thought in terse, idiomatic language. Is it unbecoming a veterinary student to express himself well in his native tongue ? Can he afford to write scientific papers one jot poorer in form and arrangement than those found in the great medical periodicals like *The American Journal of the Medical Sciences* in this country or the *Lancet* or *British Journal* in Great Britain ? A scientific paper is none the less scientific because the thought in it is well expressed. Let the man preparing for the study of veterinary medicine avail himself of the high school training in English then we will have scientific papers which, not only because of their scientific importance, but also because of their excellence of expression will command the respect of any medical society or of any medical man.

2. *The professional training.*

The standard for a veterinary medical course in America is yet far too low. The unwisdom of this is that the standard set as a rule gives a well-founded impression of inadequacy of training, while the limited training is not at all a sufficient professional education to enable the graduate to satisfactorily enter into the higher work in the profession to which, if he had a better training, he might eventually be called. The higher places of veterinary service, in the educational walks of life, that is, college positions ; the veterinary positions in departments of public health, municipal and State ; the federal meat inspection service ; the State's meat inspection and quarantine service ; the national pathological research work ; the positions in patholog-

ical research in our foreign dependencies ; the veterinary positions in the army, are with difficulty filled. There is a constant and growing demand for completely and thoroughly trained veterinarians, who are scientists in the best technical sense of the word. Lo ! Such men are with difficulty found. Some of the veterinary colleges are doing their best under the trying circumstances with which they are hampered to fit men for the crying demand. The men who are leaders in the veterinary profession as it is to-day are well aware of the low standards and the unpreparedness of veterinary graduates for the best work. It must be agreed by all hands that the veterinary training is far from complete, that more subjects should be studied ; that more time should be taken to do the work ; that there should be a more complete and more severe training demanded. The training, probably, should be something like the following :

(a) *Anatomy, surgery, and allied subjects.*

Anatomy is the key to all other veterinary subjects. It should be studied continuously for two full years. The details of osteology, arthology, myology, thoracic and abdominal viscera, the vascular system, nervous system, brain and organs of special sense in the horse should be mastered by lectures, frequent searching quizzes, dissection and demonstrations before class in lectures from prepared material, and in the anatomical laboratory from fresh subjects. But the dissections by students should include the cow, sheep, pig, dog, cat, fowls and the goose. The dissecting, absolutely required of all first and second year students, should not take less than twenty hours each week, the work being done always directly under the attending professor and demonstrators. Drawings should be required from students from dissections made in the laboratory, application to the work and certainty of results should be assured by giving each student his grade based on marks on attendance, drawings, quizzes, weekly examinations, half term and term examinations, yearly examination and examination covering the two years' work. My visits to some veterinary colleges have proven to me that this untiring earnestness is not always required of students.

Anatomy can never be ground into men unless there is severity on the part of instructors.

The work in surgery should include lectures and demonstrations in surgical anatomy, lectures on surgical principles and methods, surgical exercises, covering every common surgical operation, tried repeatedly by the students on chloroformed subjects, descriptive and operative surgery taught by lectures and quizzes on head, neck, chest, limbs, skin, abdominal organs, genito-urinary and castration. Such work, together with the cognate subjects of which I shall soon speak, cannot be taught in less than two years. The surgical principles should be borne in upon the student and his hand trained to expertness by requiring two years attendance and work in surgical clinics of his college in which he should be required, strictly applying all the modern surgical principles he has been taught, to perform major or minor operations upon patients under the eye of the professor of surgery and graduate assistants. Merely seeing operations, will not suffice. The student must be set at work himself under the skilled teacher.

The work in the surgical department should include the following cognate subjects, to wit: Zoötechnics, obstetrics, conformation of the horse, examination for soundness, horse-shoeing, saddlery, bits and biting, bridles and bridling, jurisprudence connected with surgical work in practice. All these should be taught in detail. Obstetrics should include in its teaching embryology, the period of gestation, normal and difficult delivery as they are related to all our animals, with lectures, quizzes and practical work. Knowledge of conformation of the different kinds of horses is necessary; for instance, the War Department requires from its intending-veterinarians knowledge of the conformation of the cavalry horse. The work should be both theoretical and practical. Knowledge of ideal conformation of all our animals should be had, of the different breeds and species of our domestic animals. Knowledge of shoes and shoeing is of prime importance. Each college should have a smithy and men should be taught the kinds of shoes and their use upon the mal-formed

or normal foot of the horse. The matters of saddlery and biting are needful for the proper service of cavalry and other riding horses; defective and excellent saddles and bits should be exhibited to students and the principles of governing the riding horse known. Finally the morale of the surgeon in his relation to the community and laws relating to his work should be taught. Since surgery is of such great value and includes so much the college should have a seminar in which recent literature on surgery should be discussed, cases occurring in clinic should be spoken of, papers should be read based on clinical notes—the best of them to be published with photographic illustrations or drawings in the veterinary journals.

(b) *Microscopy, histology and embryology.*

Much time throughout one year, and that the first in the medical course, should be given to these three subjects. Valuable as they are in themselves, the first as a prerequisite for all work with the scientist's best friend, the microscope; the second, to impart a full knowledge of the fine structure of the body; the third to acquaint one with the miracle of the inception and development of the fœtus,—they are the more valuable, for histology leads up to the most fascinating of all medical studies, pathology, and embryology is closely related to that practical study, obstetrics. At least a few weeks should be given up, therefore, at the beginning of the medical course to obtain a certain knowledge of the optical law governing the compound microscope, an examination of its parts and the principles of its use. The camera lucida should be studied, the polaroscope, spectroscope and microscopic photography. The student is then ready to enter upon an extensive study in histology—preceded by work in fixing, impregnating, imbedding, cutting, staining and mounting material for study first-hand of the fine anatomy of all parts of the body under the microscope. He should thus be made to prepare, stain and mount material on slides representing normal histological structures of all parts of the body of vertebrates, including man, the horse, cow, dog, and to study them under the microscope, to make microscopic drawings of

the pictures he sees under the microscope, naming all the parts. There is therefore no doubt that such a course, to be best studied, should be preceded by a course in drawing. The medical student cannot hope to record in a drawing the observations he makes on a tissue or tissues before him under the microscope unless his hand is trained to draw well what his eye sees. Veterinary microscopic drawings, as they are found in the veterinary press, as illustration on scientific observations, have hitherto been crude. We should see to it that improvement is made in this particular.

The science of embryology unfolds to the veterinary student knowledge upon the mysteries of procreation, conception and foetal development, and prepares him for practical obstetrical operation. Its study, taking only a few months—best in the spring of the year—should be taught by lectures on embryological theory, examination of the development of the chicken's egg, microscopic study of prepared slides illustrating the first steps in foetal development, by demonstrations carried on by the professor in which microscopic preparations are magnified and projected upon a screen by means of the stereopticon, and by actual anatomical study of foetuses in utero in the laboratory. The facts can further be studied by text-book work—like Minot's text—and tested by stiff written examinations.

(c) *Comparative pathology, bacteriology, meat inspection and allied sciences.*

Perhaps of all medical studies the two which should receive the most weight are pathology and bacteriology. The kindling enthusiasm of an expert, authoritative teacher in these sciences will stir deeply the heart of the student and enlarge his mind upon the commanding place of bacteriology in modern medicine and the paramount importance of the closest study of pathology. These, with the allied sciences, should occupy two years in the medical course. The study of general pathology should include not only sharp, exciting quizzes on a text like Ziegler—fusillades of questions and the obligation on the part of the student to have the clearest understanding of the tech-

nical terms of the science—but should be illustrated by actual specimens of all pathological conditions studied, brought into class, examined and remembered by all. General pathology should be accompanied by laboratory study of these same specimens, in which the student should be made to describe what he sees implicitly and correctly, to make drawings of gross pathological specimens and to study slides made from parts of the same specimens, from which he can study the pathologic condition microscopically. Such a course must be followed by one in special pathology in which particular diseases—anthrax, tuberculosis and the like—can be given a careful study from gross and microscopic material. Work in clinical examination of the blood—hæmatology, should be done in the pathological laboratory, for this is one of our chief means of differentiation in many diseases. With a museum well stocked with illustrative specimens, a plenteous supply of pathological slides illustrating the microscopical study of abnormal conditions, constant influx of new material and the master-mind of the teacher whose enthusiasm can appeal to the student, the interest can never flag.

Bacteriology is the youngest and greatest of the sciences: for it has revolutionized modern medicine. The veterinarian who is not acquainted with its methods, experienced in the bacteriological laboratory, versed in the wonders it has accomplished, is by his own confession shelved as a medical man. The veterinary professional course must, more than anything else, include the whole technique of the bacteriological laboratory; the materials of the laboratory, the theory and methods of sterilization, preparation of media, culture methods, propagation and study of bacteria, pathogenic and non-pathogenic. A whole year, perhaps longer, may well be given to this profound subject with a long period of laboratory work, lectures, text-book work. The course should include the direct study of the major portion of the bacteridian diseases pathogenic in our animals. The student to be urged, if not required, to make a special study, before taking his degree, of some one specific dis-

ease, together with the advancement of science in it and the new literature upon it.

The study of meat inspection means the application of pathological and bacteriological knowledge to the meat trade with the object of preventing disease in man. This course should be eminently practical and should include familiar talks on the methods of meat inspection as it is carried on in the federal service, some drill on the latest printed rules and regulations of the Bureau of Animal Industry, visits to abattoirs to make a close-at-hand acquaintance with the requirements. There should also be reviews on the major points to be well known in the diseases for which animals are condemned under the regulations. There should also be talks on the quarantine regulations, quarantine methods as carried on by the Department of Agriculture.

The pathological and bacteriological course might well go into milk bacteriology and milk inspection, a subject which is growing in interest in the public mind. Besides, it is fast becoming part of the function of the veterinary profession to attend to the public interest in this regard. Milk inspection unites bovine pathology with bacteriology, as it is related to bovine race. Unmistakably then it is the veterinarian's office to attend to this work, municipal or state. Moreover the veterinarian must know the methods of manufacture of serums and immunizing materials as they are made in the bacteriological laboratory. He should have the advantage of hearing popular lectures by those already in the work on the opportunities and advantages for well-trained veterinarians in national, state and municipal work where he can utilize his bacteriological and pathological knowledge and find a living, a name and a career.

(d) *Miscellaneous subjects.*

There are some subjects, which though not strictly professional, the well-trained veterinarian should know, and the knowledge of which should be had during his medical course. These are : first, breeds and the breeding of horses, cattle, sheep, swine, dogs and cats ; second, the various feeds, and feeding methods in these animals. It is expected of the veterinarian that he

should know at a glance the different breeds of the various domestic animals, the way the different breeds were formed, the value of the breeds. His words also should be those of wisdom and experience when he is questioned on the nutritive value of feeds, on amounts and kinds of feed to be given to the various animals under varied conditions. These subjects are closely allied to zoötechnics, physiology and therapeutics, and must of necessity be taught him in his course.

(e) *Chemistry, physiology, materia medica, therapeutics.*

If these subjects are to be commensurate with the needs of a well-trained veterinarian they must be taught through a period covering four years. Chemistry should include collegiate inorganic chemistry, organic chemistry, physiological chemistry and toxicology. Inorganic chemistry should be taught for a year by lectures, recitations and a full round of required laboratory work. It should include qualitative analysis of materials in solid form and in solution, so that the student will get a certain knowledge of the nature of the elements and compounds. There should be a half year in the chemistry of the compounds of carbon, organic chemistry. Physiological chemistry would give the student the chemistry of proteids, carbohydrates and fats with reactions and composition products in the animal organism; while toxicology would explain to him poisons, their actions and antidotes. To this chemical work should be added comparative urine analysis carried on by comparative analyses of urine from the various domesticated animals, because urine analysis constitutes one of our chief means of differential diagnosis in many diseases.

Physiology should be taught by recitations, lectures and through the medium of the physiological laboratory. Frequent recitations are a means of ensuring knowledge of the subject; lectures, illustrated by the stereopticon, elucidate in a striking manner the functions of the various tissues and organs of the body. In the laboratory, by testing artificially the action of digestive juices like those of the stomach, bile and pancreas on food stuffs; or by testing the phenomena of circulation or res-

pirations by means of instruments, he can have explained to him the functions of the organs or systems of the animal body.

Materia medica should not be taught as mere book work, or as a subject to be merely lectured upon. Extensive work by lectures and recitations should be done to be sure; but these should be supplemented by a materia medica and pharmacy laboratory, in which the student is given an assortment of many of the commonest inorganic and organic drugs used in clinical medicine, and is obliged to make notes on their nature, character, physiological action. He should make pharmaceutical preparations and close the course by compounding prescriptions, making liniments, pills, spirits, extracts, tinctures. Lastly he should be given a severe drill in posology, for definitely stated conditions, so that he can early begin to acquire the art of speedily and accurately writing prescriptions. There should be lectures and recitations in clinical diagnosis and therapeutics in which the aim should be to point out the various methods employed to restore animals to health by medical aid or by attention to unhygienic or unphysiological conditions. This can only be done by application of the principles in medical clinics.

(f) *Veterinary medicine; zymotic diseases; veterinary sanitary science; parasites and parasitisms.*

The crowning object of obtaining a knowledge of the sciences mentioned is to apply that knowledge in some form of medical practice. Hence a study of all these sciences must be made before the study of the principles and practice of medicine can properly be begun. The study of the principles and practice of veterinary medicine, in the precise meaning here understood, should include a full description of each disease to which each species of our animals is heir, together with causes, differential diagnosis, prophylaxis, medication. So large a subject cannot be covered in less than two years. The chief contagious diseases among animals caused by microörganisms, and embracing the most widely destructive scourges which it is our duty to study, cannot be entered upon until the preliminary sciences, particularly bacteriology, are mastered. While courses

in veterinary sanitary science and veterinary hygiene are to be studied that the means may be known of preventing or stamping out animal plagues. If to these, in the close of the course, a mastery is added of the subject of parasites and parasitisms which infest domesticated animals, the professional training all, subjects having been taken, may be said to be complete.

(g) *Medical themes ; medical or surgical clinical reports ; research theses for the Doctorate in Veterinary Medicine.*

Inasmuch as the standard of scientific writing among veterinarians is at the present time very low, there should be rigid rules that scientific students, particularly juniors and seniors, must write medical themes, clinical reports and a doctor's thesis. Two themes should be required in the junior year ; two model clinical reports and a research thesis in the senior year. The themes should be essays, excellent in structure and in scientific detail, upon some point or points which have strikingly interested the student in his work ; or they should be the record of some phenomena studied. The clinical reports should be complete studies and records, illustrated with drawings or photographic prints it may be, of some case which has been assigned to the student in clinic. The research theses must be thoroughgoing masterly expositions of some piece of research work which the student has chosen to do in partial requirement for his doctorate. The study of all recent literature of his subject for the doctorate should be obligatory, together with the added account of his own particular research work, pathological, bacteriological or otherwise.

Such a course as we have here marked out cannot possibly be completed short of four full years. Indeed, to complete it in four years would require full occupation of time and abundant energy. More than that, to appreciate the work in its completeness would necessitate the preliminary training of a four years' course in a high-class high school. Lest I should be accused of talking the veriest tommyrot, or investing my exposition of this educational theme with moonshine, I would point to the fact that this course is the sort of thing carried on in France, Ger-

many and England ; that the preliminary training and medical course here outlined is similar to that now required by the leading States of the Union in human medicine and by some in veterinary medicine ; that there are veterinary colleges in this country which have four year courses of nine months each, or are soon to have such courses, and that the demand of the times is for just such a training. The truth or untruth of the last statement will appear in the second part of my theme.

II. OPENINGS AT THE PRESENT TIME, AND IN THE FUTURE,
FOR THOROUGHLY TRAINED VETERI-
NARIANS IN AMERICA.

I. *In private practice.*

Young men of independent spirit, tact, push, grit, now, and ever will be allured into private practice. A certain amount of business ability is needed in this kind of professional activity, together with a way of getting along with your particular kind of clientèle. That the opportunities for such men, who have an excellent professional training, is great in private practice no one doubts, especially if they can get the "cream of the cream," as the French phrase has it. There is hardly a place in the country where a man can put his foot where such a man cannot make at least a living in private practice. General practice is usually divided into country and city practice ; to which might well be added canine and feline practice, and surgical practice. In the cities there is a demand for better trained men, sharp in business matters, who can modernize the methods of work and bring the professional service into a more respectable position. The cities contain many make-believe veterinarians, many of whom depend upon the game of bluff and the ways of the business sharper to get their living, rather than on downright excellent work and skill. In the cities there are some men of high attainments and high ideals, whose practice is lucrative, while their character is beyond reproach. Would that there were more of them. Professional men of character, business ability and high training, are needed in the cities. In the country there is need everywhere for men of high training, who un-

derstand and have regard for the farmer, and can be centres of intelligence among unread, hard-experienced and well-meaning men. Excellent livings can be made by the willing in the farm communities. Men who care only for dog and cat practice, or for surgery alone, must hie themselves to the cities. Men who have a liking for dogs, who are genteel always in appearance, are of excellent address, whose manners are polished, whose characters are irreproachable, who have a knack for medication and have the thorough training, need not fear to turn their steps to a city: for they can make a good living—and for more than themselves. Those who are good at surgery alone will not attain success with the same ease and with the same rapidity as the general practitioner, but their fees will be larger as they enter the road of success, and they will keep adding success to success. Born surgeons are rare. Surgeons of the highest training are sorely needed.

2. *The service of the Bureau of Animal Industry.*

There is probably no wiser planned nor better conducted branch of the federal service than the Bureau of Animal Industry. It embraces the following divisions, viz.: dairy inspection, miscellaneous, editorial, biochemic, pathological and zoölogical. In the inspection service the "eligibles have never been equal to the demand" though the salaries gradually rise from \$1200 per annum to \$2000, depending upon length of faithful service, proved fitness, gradual increase in usefulness, business ability, continued good health and good behavior. Men of widest training can do well in this service. The quarantine service needs men expert in zymotic diseases. Researchers are apt to be needed in the pathological division at Washington—but only for men of the greatest expertness and best scientific gifts; this is likewise true of the biochemic and zoölogical divisions. Many of the heads of these divisions are veterinarians. What of the editorial work of the Bureau? That can only best be done by a veterinarian who is at once a linguist, a man of literary gifts, wide scientific knowledge. Where are such men to be found to-day?

3. *State quarantine officers ; municipal meat inspectors.*

Many States have State quarantine officers, particularly the Southern States. These positions depend somewhat, of course, on political patrimony. But soon men skilled in United States quarantine work are likely to get them. The municipalities are beginning to see that it is best for the interest of public health and as a protection from the diseases emanating from the local butchering trade that they have municipal meat inspectors. Here is another opening.

4. *State and city milk inspection.*

This is a growing part of our professional work. Veterinarians who understand animal diseases and bacteriological science are the only ones who can perform adequately the task of milk inspection.

5. *Public health officers.*

Inasmuch as only men well read in the relationships of animal diseases to the public health, who are expert in bacteriological technique and in sanitary medicine can fulfil the demands of this office, more and more, we may feel assured, the demand will be for skilled veterinarians in conjunction with human medical men, for public health officers. The two professions are mutually coöperative in this work. Some of my veterinary friends, skilled in bacteriological technique, are already installed as public health officers in large cities.

6. *Researchers in pathological institutes.*

Pathological institutes, like the Rockefeller Institute of medical research and the recently endowed institute in Chicago are springing up where a few veterinarians of the highest training can win fame and enter upon a noble career. The Rockefeller Institute recently inquired of a prominent veterinary college for a bacteriological specialist in diseases propagable through milk. But no man could be found.

7. *The college work.*

It is only with difficulty that men sufficiently trained and experienced can be found to fill chairs in veterinary medicine at the State universities and in the agricultural colleges, as gifts of

speech, gifts in research, knowledge of State work and local pests and scourges, much experience in laboratory work and in the preparation of immunizing products must be had by applicants. The applicants are many, but the desirable man is indeed a *rara avis*.

8. *The army.*

The subjects assigned by the Adjutant-General and his advisers to be tried by those desiring the position of veterinarian to the army, illustrate very well the trend of opinion in the War Department upon the kind of men thought desirable for this branch of the veterinary service. Men are demanded for the army at least well taught in every branch of the theory of medicine. None others need apply. I am informed on good authority that there are applicants for this position by the hundreds, yet out of fifteen vacancies last spring only ten could be filled from the candidates who offered themselves. The reason is manifest. A rare combination of talents and excellencies is necessary. Besides the mental fitness, the candidate must have physical strength and stamina, as well as be free from physical disqualifications and deformities. The examiners and officials become acquainted at the nine days examination with him on the social side—an engaging personality, a spirit of friendliness and bonhomie, a tendency to social pleasantries and affability, a dignity of bearing and deportment, seems to be desirable. The man must be mentally equipped, physically capable, have dignity which will command respect of enlisted men, and social ease whereby he can move among his fellows in social function or at mess. My visits to army posts convince me that though the mills of the gods at Washington move slowly, nevertheless the outlook is bright for the army veterinarian. America has a way, such is her pride, of always going “one better” to Europe if she can. Eventually there will be a veterinary corps, and this corps will be certain to have as much value to the service and have as high station and as good pay as the corps in the British and German armies to-day. We of the veterinary profession must come to look up to the army veterinarian as our

pride, for we expect much of him. If he is not lethargic he will help us much in research and in the prevention of animal plagues; for to him we look for certain knowledge on such diseases as surra, nagana, mal de caderas and dourine; we expect him to prevent the introduction of rinderpest; we expect him to do as much for us as veterinary Captain Smith, veterinary Colonel Nutt and chief veterinary Colonel George Fleming did for the British army.

* * *

My task is done. The unprejudiced mind must now be convinced of the necessity for higher standards of veterinary education. When we remember our export trade in animals and animal products in 1902 was \$254,204,993,* who will say that the best veterinary care should not be assured to such animals? With an animal industry of such magnitude; with a close relation of our work to the public health; with a crying need for research in animal diseases; with a proved utility of the profession growing and widening; with the day of ignorance and chicanery in medical practice passing; with a demand of the people, the States and the army for better men; with the organization of State veterinary societies and pressure upon infamous charlatans—who, now, will say that the standard of veterinary education should not be raised? Our title would be a proud one, if we would have it so, "Veterinarian and Scholar."

SENSITIVE HORSES.—The horse does not like a nervous, fidgety, fussy or irritable man. He is too nervous and irritable himself. "Why is it," one teamster was heard to ask another, "that Phin's horses are always gaunt? Phin feeds well." "Yes," was the reply; "but he's like a wasp around a horse." A well known owner of race horses, not at all a sentimental person, recently made an order forbidding his employés to talk in loud tones or to swear in the stable. "I have never yet seen a good-mannered horse," he says, "that was being sworn at all the time. It hurts the feelings of a sensitive horse, and I keep my word good to discharge any man in my employ if I catch him swearing within the hearing of a horse in this stable."—(*Mail*.)

* Bureau of Animal Industry. Report, 1902. P. 488.

CONTAGIOUS ULCERATIVE LYMPHANGITIS.

By C. H. JEWELL, D. V. M., VETERINARIAN 13TH U. S. CAVALRY,
MANILA, P. I.

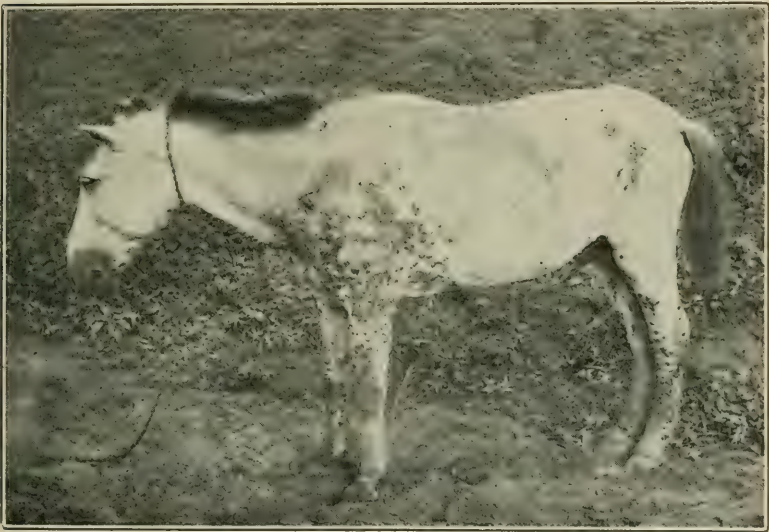
This peculiar tropical disease of horses was unknown to American veterinarians prior to the occupation of the Philippine Islands by the Americans, and the only literature I have been able to procure upon the subject has been the articles published in the REVIEW, written by the army veterinarians serving in the Philippines. I can readily see how those inexperienced might mistake it for glanders of the farcy form, or even nasal, when the ulcers have extended to the Schneiderian membrane or involved the sub-maxillary glands, as I have seen it in a few cases; yet there is a difference in the general symptoms, which one can hardly mistake after seeing a few cases, and one can determine fully by microscopic examination, as the army veterinarian in the Philippines is now supplied with a good microscope, a thing which took the War Department a long time to be convinced we were in need of and capable of using. Had microscopes been supplied sooner, many thousand dollars could have been saved to the Government.

This disease has been poorly named, since it does not take on the usual form of a lymphangitis, but primarily attacks the epidermis. "Contagious Ulcerative Dermatitis" would be more appropriate, in my way of reasoning, than the name given it by English veterinarians in India.

The cause is now known to be due to a cryptococcus, one of the forms which some writers claim to be parasitic. Some recent writers class this variety as the blastomyces. Their morphology is like the yeast fungi, and, without knowing their source, one by microscopic examination would be unable to differentiate between the two. They can be easily stained with the aniline dyes, showing in bold relief, with the pus corpuscles, which accompany a smear taken from the discharge of the ulcers.

The symptoms of this peculiar disease are somewhat similar

to farcy-glanders when the primary lesion is located on the inside of the hind leg or region of the sub-maxillary glands, yet it lacks the sudden cord-like swelling seen in the former, is not so painful to touch, and in the latter we do not have the sudden rise of temperature and rapid emaciation seen in glanders, also the animals do not react to mallein. The primary lesion may start on any part of the body surface, and spreading therefrom by contiguity rather than by the lymphatics. If in region of the head, the sub-maxillary glands become enlarged, and may break down and suppurate or the ulcers spread to the side of



View left side, showing the large areas of skin affected, also the enlarged maxillary lymph glands.

the cheek, and later extend to and attack the mucosa of the nostrils, Schneiderian membrane. In rare cases metastasis takes place, and the internal organs are the seat of lesions, lungs, liver and spleen.

In the advanced stages the animal may be affected over the entire body surface with ulcers, and greatly emaciated. In such cases an early death is the outcome.

The ulcers start as a hard swelling, covering considerable area as a rule, and in one or more places small elevations the size of a 50-cent piece rise up. These are not very painful upon touch. Sooner or later they break upon the surface if not opened with a knife. The discharge is of a thick glutinous nature, creamy white color at first and later may take on a straw color after discharging for a few days. The part may be cupped at first and later raised owing to the formation of connective tissue. These ulcers are very resistant to ordinary treatment,



View taken from right side showing the ulcers on cheek and running into the nostrils, also the ulcers of the sheath.

which was one of the reasons which led those first meeting the disease to believe it to be farcy. Accompanying this article is a photograph of a native Filipino pony suffering from this affection in the advanced stage; nearly the whole body surface was the seat of the disease, the scrotum and sheath being involved. The former is claimed by some writers never to be involved. A mass of ulcers on the right cheek extended to the Schneiderian membrane and one veterinarian had already diagnosed the

case glanders. The animal was badly emaciated when I first saw it. He was placed in quarantine by the Board of Health under advice from me, dying after about two weeks. This is the only one I have seen die from the disease.

I believe the malady highly contagious to horses, and spread by flies passing from infected animals to others biting them or contaminating sores and abrasions of the skin. Another means of its spread is by brushes used on horses affected and not rendered sterile before using upon sound animals. In one stable I had a case which had been in contact with the other horses for some time and later two other horses standing near became infected. Isolation and disinfection prevented further spread.

The treatment should be energetic from the start. Complete isolation and disinfection of stables, combs, brushes and all materials which may have come in contact with diseased animals. The hair should be clipped from around the primary lesion, the ulcer opened if not already broken upon the surface, curetted and dressed daily with tincture of iodine and a dusting powder applied. For the dusting powder alum, tannic acid and acetanilid is very effective in drying up the discharge.

I have tried the actual cautery, but it does not have the effect usually seen in chronic ulcers from other causes.

If the iodine does not prove efficacious I get good results from the following:

R Corrosive sublimate, ʒ ii.
Salicylic acid, ʒ iv.
Alcohol, ʒ iv.

M. Sig. Apply daily to the ulcers.

At the same time using the above mentioned dusting powder.

Before using either of the above remedies the parts should be thoroughly washed and all scabs removed so that the dressing can be applied to the bottom of the ulcers.

To prevent spreading of the primary lesion, I use with good success hypodermic injections of tincture of iodine beneath the skin surrounding the affected area and at the same time into the tissues beneath the ulcer.

A FEW CASES OF INJURY TO CATTLE FROM SWALLOWING POINTED OBJECTS.

BY DR. H. M. GOHN, ST. JOHNS, MICH.

Read at the Meeting of the Michigan State Veterinary Medical Association, February 4, 1904.

In reading this paper I do not claim to present anything new on the subject. It is my aim merely to mention a few cases I have seen, hoping a profitable discussion might follow. Many cases are on record of different articles that have been swallowed by cattle producing more or less serious conditions. Among articles that have been found are hair-balls, pieces of wire, needles, nails, etc., which might easily be taken in with food, but there is another class of objects, much larger, the swallowing of which to me seems only to be explained by the theory of a depraved appetite or that curiosity which seems to make it natural for some cattle to sample any unusual object that comes within their reach.

In the Report of the Bureau of Animal Industry of 1893-4 is a list of articles found in stomachs of cattle slaughtered for beef at the stock-yards in Chicago, also the report of post-mortems on two tuberculous herds, showing many of them with unsuspected lesions of internal organs caused by wires, nails, etc. Our journals contain frequent reports of such cases.

Case No. I.—Cow, tympanitic with eructations; constipated, heart weak and irregular. A cathartic was given, followed by stimulants, and the animal improved. I saw it but once, but the owner reported that a few weeks later she died suddenly and that he examined the internal organs and found two slender pieces of bone penetrating stomach walls, one of which reached, as he said, to the "heart sac."

Case No. II.—Jersey cow; had apparently been in good health; owner one day noticed her groaning. I was called—found the animal affected with pleuro-pneumonia and suggested traumatism. After a few days the animal died and the post-mortem revealed a number of pieces of wire from two to four

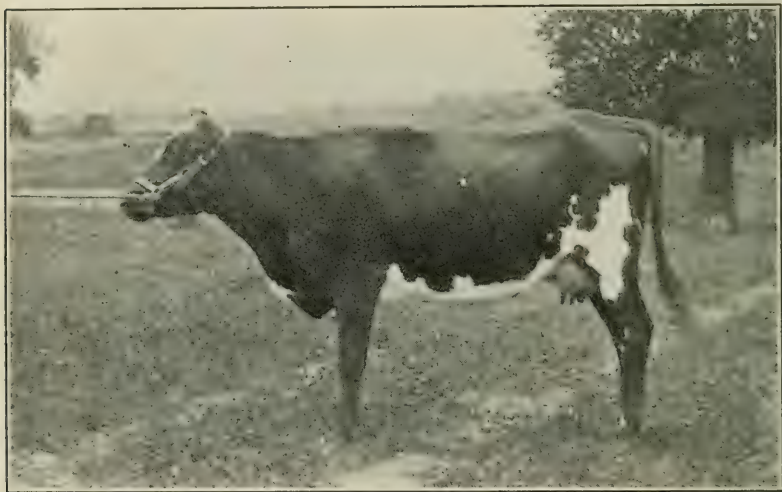
inches long in stomach, besides several small wire staples. In the centre of an adhesion to diaphragm was a black line which I believe marked the course taken by a wire probably similar to those found in stomach. The lungs presented hardly any healthy portion, being in places purulent-gangrenous. Many adhesions of pleura were found as well as much offensive fluid in pleural sac. The pericardium was much thickened, presented adhesions and contained much purulent matter. I made many incisions in the lungs and heart, but failed to find any foreign body. Possibly it may have completely eroded. The organs were in too offensive a condition to examine minutely.

Case No. III.—A cow would not eat and rumination was suspended—a little blood mixed with saliva. The animal lingered some time and was finally killed. On post-mortem I found a twisted nail in the rumen, and in the œsophagus, just below pharynx, a laceration about 3 or 4 inches in length.

Case No. IV., and which really prompted the writing of this communication, was first seen on May 16th last. The animal had calved two days previous. She was slightly bloated and grunting. My attention was drawn to a small lump on her left side in next to last intercostal space. The skin was held up as if by some pointed object. There was no sign of skin having been injured; the rib on either side seemed intact. The prominence could be raised, but would sink back on letting go of it. This caused pain and an emphysematous swelling developed.

I told the owner that the substance, whatever it was, should be removed, but was cautious about giving an opinion as to its nature, telling him, however, that we might be surprised. I need not say we were, when on making a small incision there appeared a small metal knob, and I readily drew out this umbrella rib, 25 inches in length. I at once closed the opening and directed them to apply a sack of crushed ice to the side. The cow recovered rapidly, though a small abscess formed just beside the point where the rod was removed, and when I last saw her, June 9th, appeared in good health and the owner said was giving 11 quarts at a milking.

In trying to get a history of the case, I learned that on May 5th the boys brought home an umbrella frame. They saw the cow chewing at it and, as they supposed, removed it all from her reach. The cow coughed almost continuously that night and quite noticeably for several days, but no particular attention was paid to it. When removed the groove in the rod contained partially masticated food and had the peculiar odor of stomach contents.



In the picture the larger spot on the side shows where I made the incision. The smaller one, where suppuration occurred a few days later.

THERE are three times as many animals as men in the United States, their total value being \$3,200,000,000.

WAYNE MACVEAGH, the lawyer and diplomat, has on the outskirts of Philadelphia an admirable stock farm. One day last summer some poor children were permitted to go over this farm, and when their inspection was done to each of them was given a glass of milk. The milk was excellent. It came, in fact, from a \$2,000 cow. "Well, boys, how do you like it?" the farmer asked, when they had all drained their glasses. "Gee! Fine," said one little fellow. Then, after a pause, he added: "I wisht our milkman kep' a cow."

EXTREME SUSCEPTIBILITY OF ARCTIC ANIMALS TO TUBERCULOSIS.

By CECIL FRENCH, D. V. S., WASHINGTON, D. C.

In a recent report on the health of the wild animals in captivity in the New York Zoological Park (April 1st, 1903,) Harlow Brooks, M. D., the pathologist of the institution, in his reference to tuberculosis amongst the animals, mentions the death of a musk-ox and remarks on the special interest attached to the case, in view of the fact that the creature came recently from the arctic regions, where tuberculosis is unknown. He also quotes Lieutenant Peary's experience with the Esquimaux who accompanied the latter officer to this country and contracted tuberculosis within a few days after landing.

I have had a similar experience recently with some wild swans of the whistling variety (*Olor columbianus*). These birds breed in the far north and migrate to the Carolina Sounds during the winter months. There they are often wing-tipped by local sportsmen and captured alive. They are then usually confined in poultry pens and sold to persons interested in possessing wild birds. In this manner I obtained some twenty of these birds last winter and sent a large proportion of them to Europe to stock a collection of wild fowl there. The birds were in captivity in the poultry pens about a month and were in my possession a somewhat shorter period, and at the expiration of the same length of time after arriving in Europe, succumbed one by one to tuberculosis.

These birds evidently contracted the disease in the poultry pens very quickly after being captured, and probably became infected with the avian variety of the bacillus. It is not likely they contracted the disease whilst in my possession because they were kept on virgin soil, so far as contamination by tubercle bacilli was concerned. The dead birds were examined by Mr. Thompson, of the London Zoological Gardens, and it was from him that I received the report of the nature of the disease to which they succumbed. One or two of the birds died in this country, but no examination was made of them.

REPORTS OF CASES.

"Careful observation makes a skillful practitioner, but his skill dies with him. By recording his observations, he adds to the knowledge of his profession, and assists by his facts in building up the solid edifice of pathological science."

A CASE OF MALIGNANT LYMPHADENOMA IN A DOG.

By CECIL FRENCH, D. V. S., Washington, D. C.

The disease in question, variously termed *malignant lymphadenoma*, *Hodgkin's disease*, and *pseudo-leukemia*, is characterized by progressive general hyperplasia of the lymphatic glands. In this respect it has features in common with leukemic lymphadenoma (*splenic leukemia*) and lymphosarcoma. In fact, the dividing line between lymphadenoma and lymphosarcoma is absolutely vague, as again between lymphadenoma and leukemic lymphadenoma. Where the growth remains within the capsule of the lymphatic glands, then the term lymphadenoma or Hodgkin's disease may be applied. Where accompanying such glandular overgrowth there is increase in the lymphocytes in the blood, the condition is one of leukemic lymphadenoma. And where the excessive growth of the lymphatic tissue goes on to infiltration and metastases, it is lymphosarcoma.

My attention was recently directed to a three-year-old skye terrier, male, of very high breeding, with the following history: The present owner had held the animal in his possession some two years and had noticed nothing amiss with its health until within the last two months, when he observed it to be acting in a lethargic manner with a disinclination to mount steps or travel far. Its appetite was also capricious. He mentioned in addition to these symptoms that it had a hard swelling in the throat.

On examining the animal I found the swelling to be a symmetrical enlargement of the submaxillary lymphatic glands of the nature of a lobulated mass, which was free from sensitiveness and freely mobile without adhesions to the surrounding tissues. Similar enlargements also existed in the axillary and inguinal regions. The abdomen was considerably distended, and by palpation an intra-abdominal mass could be distinguished in the position occupied by the spleen. The temperature was 102.2° F., the pulsations 125 to 135 (the animal being excited whilst under examination), and the breathing quickened upon movement about the room. A blood-count showed the following condition:

Number of red corpuscles per cubic millimeter, 5,033,000.

Hæmoglobin, 77 per cent.

Number of leucocytes per cubic millimeter, 8,530.

Proportion of white to red corpuscles, 1 to 590.

Relative proportions of leucocytes :

Small mononuclear, 22 ; polynuclear, 70.

Large mononuclear, 8.

The diagnosis was therefore, malignant lymphadenoma, since the proportion of white to red corpuscles was about normal.

There is no treatment possible for this disease, and the prognosis was therefore unfavorable. A fatal termination usually ensues in the course of one to two years. There is every prospect of an interesting post-mortem examination, and if such can be effected, the observations will be recorded in the REVIEW at some future date. It is possible that the disease in its present form may undergo transition into the true leukemic condition.

ANOMALIES FOUND IN PRACTICE.*

By R. R. HAMMOND, V. S., Alta, Iowa.

I have a short report of a couple of cases which came before me in my practice, and thought them of interest enough to report to your meeting ; have never met the same conditions before and have never seen them in print, in any text-books, and hope that they may be of some interest to the profession.

Malformation of Uterus in Heifer.

In Jan., 1903, while practicing at Alta, was called one very cold night to see a heifer, which owner stated had shown some signs of labor pains for some twenty-four hours or longer. On reaching the place I found a very fine Hereford heifer, two years old, showing signs of labor. After making examination, found the head of the fœtus in natural position, but could not find the fore limbs, but upon more diligent search found the fore limbs extending under the vagina, superior to the pelvic bones. On further examination could feel one foot passed to the lower part of the vulva and could feel it through the skin externally. I showed it to the owner and our assistant and let them feel it from the outside. The other foot passed as far as the meatus opening, the other passing to the side and extending as above, to the lower part of the vulva. As the fœtus was large, and had been dead some little time, secretions being somewhat dried up, we had some little difficulty in getting the limbs

* Presented to the meeting of the Iowa State V. M. A., Jan. 27, 1904.

back in position to enter the vagina. The new uterine extension started just anterior and under the os uteri. Had expected an injury when I first found them in this position, but upon examination found the passage a natural one, and lined with mucous membrane. We got the foetus started nicely, but when the hip joint of the foetus struck the new opening it inverted or tore out the covering of the new cavity. The cow bled profusely and had to be destroyed.

Malformation in a Cryptorchid Colt.

The next case was that of a cryptorchid colt, two years old, about 800 pounds weight, but so ugly could do nothing with him, especially near other horses. One testicle was taken as a yearling, the right one retained. In the fore part of June, 1903, was called to castrate this colt, to get the other testicle, or kill him. With my mind made up for a nice little job and a good fee, nice easy money, I went out and killed him. After casting and securely tying him, I began cleaning and disinfecting the scrotum, made my opening and proceeded to pass my hand down the inguinal canal. I searched for the internal inguinal ring or some trace of it, but did not find it, and to break through those muscles was a task. It took me fully ten minutes to get two fingers through the muscles, and after getting through began to search for the cord, testicle or something, but found no clue to the hidden testicle. After having the horse down for some little time, I gave up, very much disappointed.

The colt was in pretty fair condition for the time he had experienced, but the owner was very much disgusted and took very little care of the animal, except to feed and water him. I left, leaving instructions that should the colt die, I should be notified by 'phone. In four days I got word that he was dead, and proceeded out to hold post-mortem.

Post-mortem.—There was a mass of adipose and fibrous tissue, about six inches square, on the right anterior middle part of the pelvic cavity, one-half extending forward on the muscles and firmly attached to the wall, a surface of five inches square. This contained the floating colon and testicle, both being imbedded in the mass. The testicle was of medium size and well formed for a cryptorchid.

DISCUSSION.—C. E. Stewart remarked that if it was impossible to castrate a ridgling owing to enlargement or to adhesions, it is best to take out a section of the vas deferens. He spoke of a number he had operated on in this way, and all were satisfactory.

A FRACTURED ISCHIUM PUNCTURES THE BLADDER—A URINARY
ASCITES—ABSENCE OF SYSTEMIC SYMPTOMS.*

By S. H. BAUMAN, D. V. S., Birmingham, Iowa.

January 13th, 1904, I was called by 'phone to a three-year-old gelding, owned by Mr. Edwards, of Stockport, Iowa, with the information that horse was badly bloated. I arrived about midnight, but found, instead of flatulent bloat, as expected, the abdominal cavity filled with fluid and very much distended. Mr. Edwards also informed me that the horse was lame in right hind leg. He noticed this about ten days previous to my call, had the horse in barn for over a week and during that time had passed no urine. They had given him spts. nitrous ether, resin, etc., but with no results. The horse stood, most of the time, in a distended position, as if trying to urinate, but no straining ensued. He had been eating usual supply of hay and grain and showed little, if any, distress. During time horse was stabled, had failed to lie down.

Upon examination, I found the pulse 76, temperature 103.2, breathing almost normal. Upon examination of rectum found bladder hard and reduced so that it felt like a tumor about the size of a base-ball. I also found the shaft of the ischium fractured, extending into the inferior portion of the acetabulum. Informed owner of the condition and advised animal destroyed. Next morning after making careful examination to confirm diagnosis of night before, we had horse out in the field. Horse showed little trouble while walking with exception of a peculiar outward swing of leg, which we always have in these cases. Horse picked grass and seemed to be in good shape. Post-mortem showed complete fracture of ischium, fracture of inferior edge of acetabulum, and a complete fracture of the ileum. No injury to the greater part of the acetabulum or the articulation proper. There was no swelling, pus, or inflammatory condition of the surrounding tissues, and nothing from outward appearances to show any trouble more than that the horse was lame, which they supposed was due to a sprain. Upon opening the abdominal cavity, found it filled with fluid, which upon examination was composed, largely, if not wholly, of urine. We estimated between 30 and 40 gallons of this fluid in the abdominal cavity. The bladder was found to be about the shape of a large coffee cup, the walls thickened to fully one inch and resembling the consistency of a tumor. On the right side, about the mid-

* Presented at meeting of Iowa State V. M. A., Jan. 27, 1904.

dle, was a puncture into the bladder, which from thickening of walls, stood open, and was one and one-half inches long by one-half inch wide. Upon further examination of fracture of shaft of ischium which was broken in a diagonal manner or very much of the nature of a split about seven inches long, I found that the internal speculæ of this broken shaft had turned inward and punctured the bladder, and in the movements of the horse, had been withdrawn and finally had gotten back nearly into position again. The stomach, intestines, liver, spleen and fat on the intestines all showed a healthy condition, with the exception of the faded appearance one always finds when these organs are soaked in water.

To me this was a very interesting case. How could a horse live for ten days, and still be in good condition? Why was there no inflammation or external swelling due to this double fracture and mangling of bones and tissues surrounding the same? Why no blood in urine from puncture of bladder, and why did we not have uræmic poisoning? We can easily advance theories. I wish to say further that there was scarcely any crepitation audible during external examination, and by placing ear to hip while horse was walking this crepitation was absent.

AMPUTATION OF THE PENIS OF THE HORSE.*

By P. MALCOLM, V. S., New Hampton, Iowa.

In answer to a call by letter to examine a gelding, which the owner explained was suffering from some disease of the penis, on examination I discovered that the horse was suffering from a cancerous degeneration of the penis, which presented a very dirty appearance. I advised the owner that the only thing to do was to remove the diseased portion, as the disease would ultimately involve the whole penis and cause death of the horse. To this he willingly consented, saying, "I am tired of local treatment." As the horse had not been prepared for the operation, we decided on a later date, and I instructed him as to the preparation of the patient, which consisted in giving the horse a laxative and keeping him on short rations for twelve hours prior to the operation.

Operation.—Passed an oiled catheter to remove the contents of the bladder, which was accomplished with difficulty, as the cancerous degeneration had destroyed the distal end of the urethral canal. The patient was cast and anæsthetised. The penis was

* Presented to the meeting of the Iowa State V. M. A., Jan. 27, 1904.

withdrawn to full extent and thoroughly disinfected with bichloride solution, 1.500. The catheter was then passed beyond the seat of the disease and a bandage applied around penis, commencing just above the diseased part and extending to the prepuce, using sufficient tension to keep back the circulation. An ordinary twist was used by passing the nose loop around the bandaged penis up to the prepuce, then tightened sufficiently to hold the penis from retracting and to prevent hæmorrhage. A portion of the bandage was then removed, commencing at the lower end and unwinding up to about two inches above the place decided upon to amputate. Then with the scalpel an incision was made through the skin about two-thirds the circumference of the penis. Other incisions were then made from either end of the first incision in an oblique direction, until they met about two inches back of the circular incision. Then dissected down on the dorsal artery, exposing about two inches, placed a ligature at each end of the dissected portion. The skin and tissue lying between the oblique incisions was then dissected out, exposing the urethra as far as the circular incision; from this point about one inch of the urethra was dissected free from the surrounding tissue and cut through. The diseased portion was then removed by cutting through the fibrous portion and the dorsal artery between the ligatures. The catheter was now removed and the grooved director passed into the urethra with the scalpel. The urethra was divided up to the junction of the oblique incisions. With a curved needle and silk thread the divided edges of the urethra and skin were brought together, using what might be termed an interrupted and uninterrupted stitch or a combination, *i. e.*, pass the thread through the same as you would to make an interrupted stitch, tie a knot, take another stitch without cutting thread, and so on until you have taken four or five stitches in the urethra and skin. The skin was then brought together over the stump in like manner, leaving about eight inches of the thread with the dorsal artery ligature attached. In using this kind of stitch there is no trouble in removing the stitches. A dry dressing was used, composed of boracic acid and iodoform.

After-treatment.—Kept parts clean by douching prepuce two or three times a day with a carbolic acid and cold water solution, 1.500.

DISCUSSION.—J. H. McNeill prefers to put rubber band on. W. A. Heck and C. J. Hinkley report no danger of stenosis of the urethra or from hæmorrhage without ligating.

ABSCESS OF THE ANTERIOR MEDIASTINUM.*

By DR. N. A. CHRISTIANSON, Luverne, Minn.

The subject of this article was a stallion colt, about eighteen months old. My attention was first called to this colt in the fall of 1902, after it had been broken to drive. He had been given considerable work in breaking, and when I was called to see him, he showed lameness in the left front leg, resembling shoulder lameness. As there were no external symptoms to indicate the cause, I advised them to place the colt in a box-stall, where it seemed to improve. I had occasion to see the colt again in the spring of 1903, when it showed some stiffness of the neck and difficulty in lowering the head to the ground, and I suspected fistula of the vertebræ. During August, 1903, the attendant informed me there was a change in the colt, and found it was breathing with difficulty, and had been in this condition about two days. As the temperature was only 101 and the appetite good, I decided there must be some pressure causing the difficult respiration. Two days later the colt died, and post-mortem revealed an abscess in the anterior mediastinum, due to an injury of the vertebræ. The base of the abscess was resting on the trachea and the contents had depressed the superior portion, forming a basin. On opening the abscess, which was about ready to break into the trachea, I found a large quantity of pus. I will leave you to draw your own conclusions regarding the cause of the lameness. The very close proximity of the brachial plexus would be a reasonable theory for its cause.

DEATH OF DR. RALPH W. HALL.—Just as the forms for this number of the REVIEW were closing we learned with much regret of the death of this well-known and successful veterinarian, which occurred on March 24. He had been located in the famous Bull's Head section of New York city for more than twenty years, where he had established a very large practice. Dr. Hall graduated from the American Veterinary College, class of '80, and was a business partner of Dr. R. W. McCully. There is probably no man in this country who has had a greater experience in the treatment of the ills of "green" horses than Dr. Hall. He was a genial, big-hearted, companionable man, and an earnest and loyal veterinarian. The deceased was about 46 years old, and is survived by a widow.

* Presented to the Meeting of the Minnesota State V. M. A., Jan. 13 and 14, 1904.

EXTRACTS FROM EXCHANGES.

GERMAN REVIEW.

By ADOLPH EICHHORN, D. V. S., Bureau of Animal Industry, Milwaukee, Wis.

CONTRIBUTION TO THE THERAPY OF HÆMOGLOBINÆMIA OF THE HORSE [*Seitz*].—Following the theory that hæmoglobinæmia is due to a glycogenic separation or secretion, Seitz founded his therapy on cases which he treated, by which he not only hoped to alleviate the paralytic symptoms, but also to restore the loss of glycogen. In one case, a horse eight years of age, after a few days' rest, and being richly fed, got sick; another three-year-old mare manifested the symptoms of hæmoglobinæmia during a drive, and could only with great labor be brought home. The animals were down, showed labored breathing, profuse perspiration, made unsuccessful attempts to rise, the hind quarters being paralyzed. The author prescribed 50 to 70 gm. of bromide of sodium to be given in one litre of water, and the skin well rubbed; by means of a catheter the bladder was emptied; the urine at this time was of a coffee color, and after standing 12 hours, there was no sediment. Half an hour after the bromide was given the author gave one pound of cane sugar, which he ordered to be repeated hourly for four doses. After 12 hours the whole medication was repeated. The urine was yet unchanged. After a further delay of 12 hours, the sugar doses were repeated; the urine was now somewhat clearer; after a total of 36 hours, the urine was of a clay color. The animals after urging were able to rise upon their feet, not showing any paralytic symptoms. During the course of the disease the animals were turned from side to side, rubbed, and light food and water was given.—(*Berl. Thier. Woch.*)

EXPULSION OF THE FŒTUS AFTER DEATH.—In human medicine it is said that the birth of a child occurred after the death of the mother, probably coffin birth. The motive powers which caused the expulsion of the child were probably the putrefactive gases within the abdomen. Seifert reports in the *Journal of Vet. Science* one such case of a mare, which was in the ninth month of pregnancy. The animal died one evening as a result of colic. The following morning there was found an expelled fœtus lying behind the mare. A similar case is com-

municated by Dr. Bleisch, to the *Journal for Legal Medicine*. A cow was shot by mistake, and while the carcass was undergoing the process of evisceration, there was a perceptible movement in the abdominal region. After a lapse of a few seconds a lively calf came forth to light.—(*Berl. Thier. Wochenschr.*)

CONCERNING THE EFFECTS OF FEEDING THE MILK OF TUBERCULOUS ANIMALS [*A. Michelazzi*].—The author made numerous feeding experiments on lambs, calves, and guinea-pigs, with the sterilized milk of tuberculous cows and sheep. He came to the following conclusions: (1) That the milk of tuberculous animals contained no tubercle bacilli when the mammary glands were perfectly free from the disease, but only contained the tuberculous toxines. This milk caused a chronic intoxication on the animals when fed for a long period. (2) The sterilization of the milk at 100° C. was not sufficient to destroy these toxic substances, as Mafucci has proved tuberculous toxines resist for a long time the temperature of 100° C. On the ground of these facts the author advises abstaining from the prolonged use of the milk of tubercular cows, even when sterilized.—(*Annali d'igiene sperimentale*.)

DRYING FOOD IN HIGH TEMPERATURE AND ITS INFLUENCE ON THE DIGESTIBILITY OF RAW PROTEINS [*Dr. J. Volhard*, extract by J. Weiser].—The influence of higher temperatures on the digestibility of different food materials, was experimented upon by several scientists; however, a proper method and uniformity in the execution of these experiments was not followed until lately the Animal Physiological Institution of Moeckern took up this question extensively. The experiments of Volhardt, which extended over 12 different food materials, were made chiefly to determine what influence the higher temperature has on the digestibility of raw proteins. To determine this, he established the quantity of the raw protein, in the original food materials, also in the samples; then he exposed them for 48 hours to a temperature of 40°, 60°, and 100° C., after which he determined the quantity of the digestible proteins with pepsin-hydrochloric acid. These experiments gave the following results: The digestibility of the proteins is diminished in proportion to the high temperature to which they have been exposed for drying. The drying, up to 60° C., has only slight effects on the digestibility of proteins, but higher temperatures than this—for instance, steaming—results in considerable differences. Not only is this the case in natural food materials, but also in such artificially manufactured food, which

in their preparation were exposed to higher temperatures, a repeated drying of these diminishes the *digestibility of the raw proteins*.

LOCALIZATION OF TUBERCULOSIS AMONG MEAT CATTLE IN MOSCOW.—According to J. Kowalewsky, by means of abattoir statistics, the frequency of tuberculosis among cattle in the Moscow abattoirs is estimated at 7.06 per cent. During the years of 1898 to 1900, there were 654,038 cattle slaughtered, of which 45,891 were affected with pearl disease. From 1895 to 1898, among the slaughtered cattle, 74,381 were affected in the same manner. The following numbers give the relations of the tubercular lesions: (1) The lymph glands of the lungs were affected in 94.5 per cent.; on the serous surfaces (membranes), 7.2 per cent.; in the internal organs, 25.1 per cent.; (2) In the head and region of the neck, 56.1 per cent.; in the general coverings, muscles and skeleton, 1.4 per cent.; in the abdominal cavity, 15.1 per cent. From the carefully detailed statistics of the localizations in the individual organs, it is worthy of mentioning that tuberculosis is most frequent (60.3 per cent.) in the retropharyngeal lymph glands. The next frequent place is the bronchial glands (60.1 per cent.); the third, the mediastinal glands (30.9 per cent.); then come the lungs (23.7 per cent.). Tuberculosis of the udder was found only in 27 cases, relatively 0.03 per cent.—(*Pizeglad Weterymarski*.)

ITALIAN REVIEW.

By Prof. A. LIAUTARD, M. D., V. M.

LAMENESS OF THE SHOULDER AND OINTMENT OF GARLIC. [*C. Fabrelli*].—Whether garlic is as irritating externally as it is internally, its application in veterinary medicine is not common. The author has used it on several occasions already, and again in the shape of an ointment has obtained a very good result as a counter-irritant in a case of shoulder lameness. The subject had been lame for some time; he had been treated by the owner for lameness of one leg, then of the other, and finally was placed in the hands of the author, who ordered frictions with garlic ointment, with massage over the shoulder of the lame leg, repeated twice a day for six or seven days. After a week of treatment, improvement was well marked, and complete recovery took place a few days after. Two years have elapsed, and there has been no return of the lameness.—(*Giornale d'ipologia*, Oct., 1903.)

LONGEVITY IN ANIMALS.—Statistics teach us many queer things in relation to the duration of life in animals, so many of which are victims of man. The horse and donkey may live up to 35 years; cattle have reached the age of 30; the dog 25; sheep, goats, swine and cats, 15; rabbits, 8 to 10; the goose, 30; ducks, chickens, turkeys, 12; raven, 100; elephants, 100 to 200 years. But the animal which holds the record of longevity is the turtle. There was one which weighed 40 kilogrammes, was born in 1750, and to all appearances will live 100 years longer. It was spoken of in 1810 in a Paris journal, and was bought by Rothschild for the London Zoölogical Garden.—(*Giorn. della R. Soc. Veterinaria, Nov., 1903.*)

PERFORATION OF THE ŒSOPHAGUS BY FOREIGN BODY—QUICK FATAL TERMINATION [*Dr. Arturo Soprana*].—One evening after returning from pasture a steer seemed sick; he was very dull, refused all liquid and solid food. The owner attributed this condition to an excess of work and the great heat. Nothing was done. The next morning, however, the animal exhibited alarming symptoms, which demanded immediate attention, and the author was called. He found the animal standing, with its head resting on the hay-rack, the eyes fixed, and moaning with great pain. The surface of the body and the extremities were cold; the temperature almost normal, respiration painful, deep and rather accelerated. The animal does not care to move; if he does, it is with difficulty and pain. He frequently assumes the decubital position, which seems to give him ease. At the examination of the heart, the sounds are found much louder, and each contraction can be seen at a distance. The beatings are irregular and intermittent, sometimes for seven or eight seconds. Nothing peculiar on auscultation. The diagnosis is difficult, although by the general aspect a cardiac lesion is suspected. Of what nature? Possibly traumatic. The animal dies the same day. At the post-mortem the pericardium was found normal; the muscular structure of the heart and the valves were also healthy. The musculo-nervous centres were then examined from the heart towards the head. On a level with the fifth cervical vertebra, alongside the Œsophagus, a collection of yellow, creamy pus was found, the size of a big nut, and surrounding the vasculo-nervous fasciculi of that side. In the centre of this abscess there was the hook of a small ear-ring. The abscess was in direct communication with the lateral wall of the Œsophagus, which presented a longitudinal solution of continuity. The foreign body had made its way out of the

œsophagus and by its presence given rise to the abscess; and by its presence the functions of the bloodvessels and nerves had been interfered with, giving rise to the symptoms which had been displayed during life.—(*Clinica Veterinaria*, Nov. 7, 1903.)

PSEUDO-MEMBRANOUS DIARRHOEIC ENTERITIS IN A STEER [*C. Fabretti*].—A team of steers were well fed and sent to market. Not being sold, they were taken home, when one began to be ill. For three days he refused his food, and in the evening was taken with violent diarrhœa. On the fourth day the writer was called. He found the animal suffering with profuse diarrhœa, very foetid. The partitions of the stall were covered with its green, filthy products. The farm hand, who took care of the steer, reported that he had found in the gutter, mixed with the fæces, a piece that looked like sausage. It was a piece of false membrane, representing exactly the conformation of a portion of the intestines; it measured 50 centimetres in length. The treatment consisted in the administration of three doses of 12 grammes of protosulphate of iron, each with a little emetic and calomel. The next day the animal eat and ruminated, and had no more diarrhœa. During the night he had passed another piece of intestine, longer than the other. Without further treatment the animal got well. The object of this publication is to call attention to the good effects and results obtained by such an old drug as the protosulphate of iron.—(*Il Nuovo Ercolani*, Nov. 5, 1903.)

PROLAPSUS OF THE UTERUS—AMPUTATION—RECOVERY [*Dr. Vita Zagarrio*].—A female donkey which had two days previously given birth to a living colt, and had had violent expulsive efforts afterwards, had as a consequence prolapsus of the uterus. Through the vulva there protruded an enormous tumor, hanging down to the hock. Much bruised and lacerated by improper manipulations and injured by the pricking of many fowls living in the same barn. The animal was comparatively quiet, her pulse and respiration normal, her temperature 39.01. As reduction was almost impossible, amputation was resorted to. The animal was cast, with her hind parts raised, so as to operate more easily and reduce what portion of intestine might be involved in the prolapsus. The uterus was cleaned, thoroughly washed, and supported by assistants on a wide piece of cloth. So as to reduce the whole mass and remove from it a large quantity of the blood, preventive hæmostasis, Esmarch's method, was resorted to with a bandage dipped in a solution of

perchloride of iron. This was repeated four times, and being assured that neither bladder nor intestine was involved in the prolapsus, a strong ligature, well disinfected, was applied at the base of the vagina. When the traction upon the ligature had been judged strong enough to arrest all hæmorrhage, an ordinary surgeon-knot was made, and the amputation occurring four centimetres back of it, the protruded part was removed and the stump returned into the pelvic cavity. A little escape of blood was arrested with perchloride of iron. Disinfection was carried out all along. The next day the animal eat well, and the pain subsided by degrees. After four days the fever had all disappeared, and in thirteen days the ligature with the sloughing portion of the stump came out, leaving a small wound, which healed rapidly.—(*Giorn. della R. Soc. and Acad. Veter. Italiana*, Nov. 21, 1903.)

CYSTOPLEGIA AND CHRONIC ULCERATIVE CYSTITIS IN A HORSE [*Dr. C. Nencioni*].—The following is an extra from an observation of the author at the Veterinary Department of the University of Pisà: The subject had been brought to the clinic and condemned to be destroyed by an injection of strychnia on account of incurability. He was about twelve years old, and presented the following symptoms: While walking he had a constant dripping of urine, which became more abundant when trotting. Defecation was rather small. Rectal exploration revealed a marked distention of the bladder, which felt like an ellipsoid tumor, whose anterior *cul-de-sac* required the introduction of the whole arm to be felt. Pressure on the bladder through the wall of the rectum brought out a clear urine; when the pressure was made while a catheter was introduced, the urine became white, thick with deposits, but no ammoniacal odor. The rectum was full of fæces. No calculi nor tumor could be detected, and the diagnosis of paralysis of the walls of the bladder with that of the rectum was made. The animal was killed with strychnia, and the post-mortem made four hours afterwards. Near the entrance of the sheath on its inside there were urinary sedimentous deposits, some pressing on the urethra. Besides the lesions of the mode of death, which were found in various parts of the organism, most interesting ones were found in the urinary apparatus. The bladder was found full of urine, largely distended, and occupying a large portion of the abdominal cavity. The walls of the organ were hard and rather indurated; the external surface covered with villosities. The neck of the bladder was dilated, the muscle of Wilson atrophied.

The urine contained in the bladder was cloudy and thick with sediment. The walls of the bladder were enormously thick and indurated. The mucous membrane was irregularly rough, yellowish gray, tuberculated with muco-purulent substance and covered with numerous ulcerations. Some had a necrotic aspect, with edges well marked, and an irregular *cul-de-sac*, gray in color; others had the appearance of confluent ulcerations. They were of various sizes, arranged irregularly on the mucous membrane, principally at the fundus. The ureters were dilated. In the kidneys the cortical portion was retracted, pale in color; the pelvis was dilated, with catarrhal lesions of the mucous membrane, and deposits of urinary salts.—(*Il Nuovo Ercolani*, Nov. 15-30, 1903.)

FILARIA LABIATO-PAPILLOSA IN THE SMALL INTESTINE OF A STEER [*Oreste Fantin*].—This parasite has often been observed in the abdominal cavity of cattle, without having given rise to any anatomo-pathologic lesions. Known under the various names of *F. terebra*, *F. labiato-papillosa*, etc., the author has seen them in sufficient quantity in the peritoneum to create nausea and diarrhœa. Lately in examining meat at the slaughter-house, he observed coming out of the small intestine of a steer a nematode, which when washed resembled the filaria he had found before only in the peritoneum. Dr. F. sent it to Prof. Stossich, who described it as a female worm of the *Filaria labiato-papillosa* species.—(*Clinica Veterinaria*, Dec. 5, 1903.)

MARE, MOTHER OF TWO MULE TWINS [*Dr. A. Minardi and D. C. Crocè*].—Of all our domestic animals the mare is the one which least frequently gives birth to more than one young. St. Cyr and Fleming have recorded few cases, and Rueff has said that one case of twins has been recorded out of 250 normal cases. In all, the young were either dead at birth or died shortly afterward. Most of the cases of double or triple gestation in mares have been attributed to two successive fecundations; the female being covered at more or less short intervals. The following case was witnessed by the authors: A mare, aged seven years, gave birth to two mule foals, one male and one female. Both were well built and well developed. The mother had been covered but once by a donkey. This is interesting for three points: (1) It is the first on record of a mare having twin mules at one delivery; (2) contrarily to most cases already observed, the two little fellows, now three months old, are in excellent condition; (3) this double gestation is the result of only one fecundation.—(*Clinica Veterinaria*, Dec. 5, 1903.)

ARMY VETERINARY DEPARTMENT.

A SUDDEN DISCHARGE OF AN ARMY VETERINARIAN WITHOUT TRIAL.

Army veterinarians were greatly mystified, noticing in the *Army and Navy Journal* the publication of an order which decreed the discharge of a veterinarian of Cavalry to take effect February 29, 1904. No cause nor explanation was given. Private inquiry elicited the information that the veterinarian in question, only recently appointed, had turned out to be a drunkard, that he had committed acts unbecoming an officer and a gentleman, and that the facts reported to the War Department brought forth his discharge by telegraph.

It is most unfortunate that such an incident should have occurred at the present time when our petition for granting us some modest recognition, that is so dear to all of us, is just passing through the hands of the War Department. It is deplorable that it could happen at all. We were in hopes that the strict entrance examination into the military service was a barrier to the creeping in of undesirable elements into the Army, and it was regarded as a distinct progress when some four years ago a confidential report stated that the officers constituting the examining board were instructed to make a careful inquiry into the moral and social fitness of the candidates for the Army Veterinary Service. There is no need of dwelling upon the importance of this phase of the examination for Army Veterinarians and it should not be relaxed.

There is much concernment about this case. Some think that it looks bad for the rest of us if one can be so removed from our midst without trial. So it does. But we may consider that the young veterinarian in question was, in a sense, still serving his probationary time, and that, from all accounts, the case of our fallen *compere* was a hopeless one. By his quiet removal, unprecedented as it is—as far as we know—he and the rest of us were spared the greater humiliation of having the charges and specifications of a court-martial printed and distributed throughout the Army for the delectation of those who, from reason or no reason, are waiting for a chance to slur at our struggling profession in the Army. (O. S.)

* * *

ANOTHER ARMY VETERINARIAN SEEKING RETIREMENT.

Dr. S. W. Service, 10th Cavalry, has a bill before Congress asking his retirement from the Army for long and faithful ser-

vices rendered, for old age, partial loss of sight and hearing, and for rheumatism contracted in the service. Veterinarian Service is 69 years of age. He and Veterinarian Tempany, 9th Cavalry, who has had a bill for retirement in Congress for two consecutive sessions, feel most keenly the lack of a provision for retirement of army veterinarians, and no immediate relief is in sight for them as matters stand at present. (O. S.)

* * *

A REQUEST TO OUR COLLEAGUES IN CIVIL LIFE.

One letter received from a veterinary practitioner states that he has written to his Congressman and Senator regarding our petition to the War Department, and that they have promised him to do all they can for it. Other correspondents have asked what they can do to help the good cause along. It is certainly pleasing to know that our colleagues in civil life take such live interest in our future welfare in the Army, and their good intentions are greatly appreciated. But we wish to inform them that at the present writing it is not even known whether our petition has reached the War Department, and how it was received and endorsed. Thus any such well meaning action is premature, and we suggest that they spare their thunder until some more opportune time.

(O. S.)

CANCER IN THE LOWER ANIMALS.—Cadiot, at a recent meeting of the Académie de médecine, as reported in *Bulletin médical* for February 3d, gave his personal experience with cancer in animals, which has extended over many years. He has found epithelioma to be the commonest form, followed by melanosis and sarcoma; there are 40 epitheliomata to 7 sarcomata. Animals seem to be liable in the following order: dogs, cats, horses, cattle. In 2220 dogs Cadiot found 954 cases of cancer, but only 208 cases in 18,100 horses. The site of the lesion varies with the species. In the horse, the jaw is most frequently attacked, then the sinus, the testicle, and the penis; in cattle, the liver, the kidneys, the bladder; in the dog, the skin, the teat; in the cat, the teat, the skin. In both dog and cat epithelioma of the lips or tongue is rare. Cadiot favors the ætiological theory of aberrant cells rather than that of a microbian origin. For periods of seven years Cadiot has forced old and feeble dogs to come in constant contact with cancerous dogs, yet he has never seen a single case of contagion. Repeated inoculation has never produced a malignant growth; there have occurred nodules which, however, were apparently defensive in their nature.

BIBLIOGRAPHY.

SURGERY OF THE FOOT OF DOMESTIC ANIMALS. (Chirurgie du Pied des Animaux Domestiques.) By J. Bournay and T. Sendrail, Professors of the Veterinary School of Toulouse. 1 vol. in 16, of 492 pages, with 135 illustrations. [Cadéac Veterinary Encyclopædia.] J. B. Baillière et Fils, Rue Hautefeuille, Paris.

Diseases of the foot in domestic animals, and especially in horses, are commonly observed and ordinarily serious. Their study offers a peculiar interest to veterinarians.

The importance of the subject is due to the great functional part of the foot, which keeps under its influence the entire locomotory mechanism, and consequently the principal economical function of the horse, which is almost exclusively used as a motor agent.

The foot carries the weight of the body, through it the animal takes contact with the ground; it is the supporting point of all locomotory levers; it participates in the diminution of locomotive pressure and reaction; and finally, it is an organ of feeling sufficiently sensitive to allow the animal to move in darkness with a certain amount of assurance.

The functional overwork on a ground artificially hardened, and the necessity of the use of supplementary protective apparatus, the shoe, are sufficient to explain the frequency of the alterations of the foot. The anatomical complexity of the region, the number of its organs, and the variability of the tissues of which it is made, suggest the diversity of these alterations. In relation to their severity, it is naturally due to the delicacy of the organs affected, which are concealed and less accessible because of their horny cover.

The great importance of the diseases of the foot justifies the presence of this volume among those which form the Encyclopædia of Cadéac.

Its numerous chapters cover the following subjects: *Solipeds*—General pathology of the foot; atrophy; defectuosities in size, form, standing, thickness, or quality of the hoof; traumatic affections of the foot, coronary and plantar regions; inflammatory affections; tumors. *Cattle*—Traumatic affections; laminitis; dermatitis; grease, canker, etc. *Sheep, Goats and Swine*.

PROCEEDINGS AMERICAN VETERINARY MEDICAL ASSOCIATION, SESSION 1903. M. H. REYNOLDS, Chairman Publication Committee, St. Anthony Park, Minn.

We have received a copy of the bound proceedings of the

Ottawa meeting of the A. V. M. A. from Chairman Reynolds, and, though it is sent out a little later than for several years past, it is by far the best of any that have preceded it, many of the papers being splendidly illustrated, while the paper and typographical excellence of the work are in keeping with the great care and taste which the Chairman has given to its editing. Irrelevant matter has been rigidly expunged, verboseness eliminated, and a direct method of stating facts employed which does not admit of two meanings. The book in its present form is in every way worthy of the dignity of the great event which it so faithfully portrays. It constitutes one of the best library volumes which a modern veterinarian can place upon his shelves.

SYNOPSIS OF VETERINARY MATERIA MEDICA, THERAPEUTICS AND TOXICOLOGY. By Edwin L. Quitman, M. D. C., Professor of Materia Medica, Therapeutics and Toxicology in the Chicago Veterinary College. Second edition. Revised and enlarged. Chicago : Alexander Eger, Publisher, 1904.

As indicated by the title, the volume which Mr. Eger has placed before the veterinary profession in an enlarged and much improved form, does not essay to be a full text-book upon the complex subject synopsized, but "it has been the aim of the author to make this work serviceable to both the student and the practitioner of veterinary medicine by omitting all unnecessary embellishments or padding, that the reader may quickly glean the essence of the knowledge of the subject or drug for which he may be seeking." It is, then, more of an elaboration of the notes used by Prof. Quitman in his lectures at the Chicago Veterinary College, and, as is the case with most all such productions, is apt to reflect the individual opinion of the lecturer more than the consensus of general professional judgment. It could not be otherwise, for a class of students look to their teacher for guidance in their estimate of drugs, and he fulfils their wants by making deductions from his special opportunities through reading and experience, and thus his subject is treated of more from the individual standpoint than is the case with more pretentious text-books upon materia medica. No fault is found with Prof. Quitman's conclusions; most of them are in conformity with our own. Our only object is to be a faithful reviewer. He has certainly brought into compact form a great amount of information upon the subject, and it is right up to the hour, for we observe the description of new drugs just placed before the profession. Mr. Eger does better with each new work. The present one is splendidly printed and bound in half leather, and sells for \$3.

CORRESPONDENCE.

PARTURITION IN THE SOW—REPLY TO DR. MAXWELL— TROUBLESOME SCRATCHES.

STROH, IND., March 14, 1904.

Editors American Veterinary Review :

DEAR SIRs:—In reply to H. S. Maxwell's inquiry for pointer on sow parturition, I offer the following :

Case I.—Farmer came to my place early one morning and asked me to deliver a sow. On arriving at his place found a large sow, very fat. Owner said she had been in labor about 24 hours. After due preparation for self and sow, I proceeded. She was just large enough so I could get my arm in, and at arm's length (I mean this) I reached a pig. There seemed to be no action of the uterus, as the pigs moved only as I moved them. Well, I left at noon, and had the satisfaction of a pleased farmer, a good fee, and eleven living pigs fighting for dinner at the sow. Before leaving I, however, flushed the uterus with permanganate of potassium solution, left a laxative for the sow, and informed the farmer of the complications liable to arise.

She made a good recovery and raised all her pigs with a little aid the first few days.

Case II.—Was 'phone message. Operator had used pig forceps, but got "stuck," as he said, after pulling off the head by aid of small cord. I got this dead one, and after it two live ones, then the last about half, where it stopped for some reason, and, lo, my pig's life was squeezed out in this shape. (I saw a calf die in this position while a student.) This was a young sow, and came near dying, but recovered.

In conclusion, my experience, though limited, gives me more confidence in a good strong, pliable cord and a small, careful hand, with a cool head, than in any pig forceps I ever saw used. If I use my hand I can tell when I am pulling on the pig, and with the forceps I think may rupture many a sow ; but you say what if you cannot get in ? Well, another case comes to mind : 'Phone call, 8 P. M. ; understood sick horse ; drove eight miles ; on arriving man said "hog," not "horse." On inspection found sow, about ten months old, walking about the pen ; pig's head protruding ; caught sow ; farmer held her, squealing, and I got pig in pieces. This was No. 1, and judging there were more, I tried to enter ; two fingers and a thumb was the room. I then gave her a hog-dose of fl. ext. ergot and cotton root bark, with a dose of quinine sulph. together ; no ef-

fect. Waited one hour. I next gave her half an ounce of the mixture, and, being tired ourselves, we went in and laid on the floor of the barn, intending to go out in an hour. Nature came to our assistance, for we slept four hours, and on looking at our case, we found one dead pig, two live ones, and the placenta. Saw the farmer in a couple of months and he told me he lost the pigs on old cow's milk, but sow was all right.

I have never seen a case where I thought the "abdominal operation" was advisable, for I was called when the case had gone too long. Hope this will be some aid to friend Maxwell.

Now, what shall I do to remove the swelling in the leg in a case of neglected scratches? I can heal the cracks, but the swelling goes down on exercise, to appear again. This case has been under treatment by a quack for four months; then a graduate took it and treated it two months. He then brought the horse to me, swollen from foot to thigh, hot and very tender, sore below fetlock to half way to hock. I used epicarin, arsenious acid and nitrate of potassium treatment; it helped awhile, then no change; then used Goulard's extract and oil externally; gave ball of aloes and heart stimulants. This seemed just the thing, only to fail to *cure*; then used dressing of vaseline, lead oxide, and iodized phenol, with the same result, and now I have him all healed, but his leg is swollen some; worse some days than others; and I know he's not cured. He is a four-year-old, and has been treated now all in all nearly nine months, and I am not satisfied, though the owner says "he's lots better." What shall I do?

J. B. YOUNG, D. V. S.

P. S.—I have had many cases of scratches, and in every instance the right hind leg is the one affected. Is it because of weaker circulation on this side?—J. B. Y.

AS TO OXYGEN INJECTIONS IN PARTURIENT APOPLEXY.

KEWANEE, ILLINOIS, March 15, 1904.

Editors American Veterinary Review:

DEAR SIR:—Since my article appeared in the March number I have received 25 letters, asking where the oxygen tank can be bought. I think any instrument firm can supply it. The size I use holds 100 gallons of oxygen, rubber tubing about 10 feet, with common milking tubes. They most all wanted to know how much oxygen to use. I will say, inflate the udder until tense with the gas.

Truly yours,
FREDERICK R. WHIPPLE.

SOCIETY MEETINGS.

OHIO STATE VETERINARY MEDICAL ASSOCIATION.

This Association convened for its twenty-first annual session in the new laboratory building, Veterinary Department, Ohio State University, Columbus, Ohio, January 12. The meeting place is practically an ideal one, as all seats are raised, enabling every one to plainly view the speaker.

Session was called to order by President J. H. Blattenburg, at 2.30 P. M. Prof. Thompson, who was to have delivered the address of welcome being unavoidably detained, Dr. S Sisson performed that duty with a short and pleasing *ex tempore* address, which was responded to by Dr. Blattenburg as follows:

"In response to the eloquent address of welcome to this Association by Prof. Sisson, I feel inadequate with speech or language to reply to such hearty words of greeting.

"This should be a day of thanksgiving for the privilege of this Association and the kind invitation of Dr. White to assemble in this new and most complete Veterinary Department of this grand institution of this great State of ours. Compare but a few years past when this Association would meet downtown in some alcove, or unsuitable room in an office building, or an out-of-the-way corner in one of the hotels, with that of the present place of meeting, which has been our privilege and pleasure for the last few years. And long may it continue!

"Few other State veterinary associations have the opportunities of assembling equal to those of the Ohio Veterinary Medical Association. Note the splendid equipment of this institution—the excellent corps of instructors composing its faculty, ever willing and ready to aid this Association, clinical benefits, and the many advantages of making these meetings most pleasing and profitable. These are opportunities scarcely ever afforded the American Veterinary Medical Association, and advantages of which more veterinarians throughout the State of Ohio could and should avail themselves.

"You in charge of this branch of education of the Ohio State University are to be congratulated upon your diligent and untiring efforts in maintaining and continually building up one of the best and most thorough institutions of veterinary science.

"Success is not always proven by numbers, but how well done; as Emerson says: 'The true test of civilization is not in

the census, nor in the size of cities, nor the crops—no, but the kind of men the country turns out.'

"Again in behalf of this Association I wish to thank those in authority for the courtesies extended us as an organization."

The minutes of the last session were read and approved, after which roll-call showed the following veterinarians present: F. E. Anderson, Findley; W. A. Axby, Harrison; J. L. Axby, Harrison; E. R. Barnett, Akron; O. V. Brunley, Columbus; H. W. Brown, Columbus; J. H. Blattenburg, Lima; S. E. Bretz, Nevada; J. W. Choates, Columbus; G. W. Cliffe, Upper Sandusky; Louis P. Cook, Cincinnati; W. R. Clark, Wauseon; H. S. Cooley, Cleveland; L. W. Carl, Columbus; A. H. Collins, New London; E. H. Callender, Zanesville; W. E. Clemons, Granville; J. B. Caughey, Columbiana; P. A. Dillahunt, Springfield; Geo. Freese, Freeport; J. D. Fair, Berlin; C. B. Frederick, Canton; J. L. Faragher, Lorain; H. A. Forrester, Columbus; Wm. H. Gribble, Washington C. H.; Frank Griffin, Columbus; A. D. Gemmill, Celina; R. C. Hill, West Alexandria; E. R. Hinkley, Sandusky; Wm. R. Howe, Dayton; T. B. Hillock, Columbus; E. O. Hess, Elyria; N. W. Hillock, Columbus; T. E. Jones, Newark; W. A. Labron, Xenia; Constant Lake, Portsmouth; J. S. Lake, Bellefontaine; C. E. Leist, Columbus; J. A. Meagher, Glendale; S. D. Myers, Wilmington; R. J. Michener, Lebanon; H. M. Manley, Dayton; Frederick Miller, Fort Recovery; J. V. Newton, Toledo; H. W. McMillen, Miamisburg; E. L. Price, Circleville; I. A. Ruby, Plymouth; C. H. Sater, Hamilton; S. S. Snyder, Springfield; L. A. Severcool, Elyria; F. F. Sheets, Van Wert; Walter Shaw, Dayton; E. H. Shepard, Cleveland; S. Sisson, Columbus; D. H. Udall, Columbus; D. S. White, Columbus; Geo. C. Webb, Tallmadge; W. E. A. Wyman, Prospect; Jos. Wingerter, Akron; and others whose names we failed to obtain. The senior students of the Veterinary Department of the University were also present, making in all a goodly sized number.

President Blattenburg delivered his annual address, as follows:

PRESIDENT'S ADDRESS.

"Having been chosen to act as your presiding officer, I wish you to understand that the compliment and honor you have conferred upon me is felt with a very keen sense of appreciation.

"Through our chosen vocation we meet the wants of an existence. Not always satisfied with that alone, we seek more than a mere livelihood, making efforts to multiply our earnings

by increased energy; but to me the satisfaction of having acquired coveted worldly possessions could never equal the honor craved, which has been extended me by those in the same field of labor.

"We meet from year to year, not that we may receive remuneration with a price for our time spent and efforts put forth, but that we may show that we are progressive and intend to advance. Even if you remain in your seat and raise no voice in the discussions of the various subjects presented, yet you show by your very presence your interest in the welfare of the Association. Were you not interested, you would not be here at the expense of time and transportation. Should you expect more than is being brought out in the discussion following the reading of a paper, a question relating to the point you are most interested in, put to the author, might be the very key to an interchange of opinions most interesting and beneficial to all assembled.

"The present and future success of this Association depends entirely upon our individual efforts. We do not expect to deteriorate; we do not wish to remain at a mere standstill; we hope and expect ever to continue to progress. But yet it is very easy to assume either of the two former conditions—that of retrogression or of non-progression. 'But industry need not wish.' By our willingness to respond to any duty assigned us, such as spending some time in preparing ourselves upon a given subject, we may aid in presenting such interesting programmes from time to time that not one member of this Association will willingly remain away from these meetings. By our own zealousness in the work of this Association, we stimulate a desire in those eligible to membership in this organization to unite themselves with us.

"At these meetings there is one thing of no little importance continually confronting us as an association—that of veterinary legislation, which as a barrier can be overcome by our individual efforts, providing each and every member of this Association place himself in touch with his representatives and senator of his senatorial district; or by the aid of competent counsel or a lobbyist, or possibly some of you may be able to do a little 'wire-pulling' at the coming session of the legislature, which convenes this month.

"We, having qualified ourselves for our profession through severe duty and hard study, at institutions chartered by various States and countries and recognized by this State, are deserving

more protection than this State affords us as citizens. And it is an individual duty we owe ourselves and our profession, through which we gain our livelihood, to do all in our power, by influence, time, or an honest expenditure of money, that will give us such legislation as will protect us against empiricism.

"I have had prepared by able legal talent a bill under the head of 'An Act to Amend and Supplement the Revised Statutes of Ohio as passed May 21st, 1894,' which I shall submit to you later for your consideration."

Motion was made, that as the Committee on Constitution and By-Laws were ready to report, that we go into executive session to consider the same. The motion prevailed, and all but members left the room. The changes proposed were really so many as to affect almost every article and section of the present laws. They were first read by section and amended, if necessary, and then read and adopted as a whole. We have not space to give all these changes, but the most important are: To have but one Vice-President instead of three; to pay the Secretary a salary of \$50.00 per year; that all applicants must be graduates of colleges giving a three-year course of not less than six months each year, and with not less than four reputable qualified veterinarians on the teaching staff; and also applicants must be legal practitioners of Ohio; to elect three censors, whose terms of office shall be three years, one to be elected each year, and these three censors, together with the President and Secretary, shall constitute a Board of Censors, whose duties are responsible and varied, but an appeal from their decision can be taken to the Association.

Next followed the nomination and election of officers; and after this the Secretary will be well provided with ballot paper, as it was surely necessary this time, especially in the selection of censors. The result was declared by the Chair to be as follows:

President—David S. White, Columbus.

Vice-President—W. E. Clemons, Granville.

Secretary—Wm. H. Gribble, Washington C. H.

Treasurer—T. B. Hillock, Columbus.

Censors—Three years, E. H. Shepard, Cleveland; two years, J. D. Fair, Berlin; one year, O. V. Brumley, Columbus.

While it was probably not thought of in their selection, still it is a fact that the three Censors are from three different colleges, Ontario, American and Ohio State University.

L. A. Severcool, of Elyria, and T. E. Jones, of Newark, presented through the Secretary their applications for reinstatement.

ment. The requisite fees having been paid and there being no objections, their petitions were granted.

It being 6 P. M. we now adjourned for supper.

Reconvened at 8 P. M., President Blattenburg in the chair. A large mass of correspondence was on hand, mostly of not much interest. A letter from W. McFadden, Cadiz, Ohio, asked if a graduate of a certain Kansas City college was eligible to membership in this Association. On motion, this was referred to the Board of Censors to answer. A communication from Dr. J. R. Mohler was read asking contributions to the Nocard Memorial Fund. A resolution was adopted instructing the Secretary to forward \$15 as the Association's donation. Dr. Geo. Butler, connected with the B. A. I., and now a resident of Eau Claire, wrote, requesting to withdraw from the Association. His request was granted, and then the doctor, who has been a member since 1884, and a worker, was unanimously elected an honorary member, such honorary membership to cease if he again becomes a resident practitioner of Ohio. Dr. E. H. Callender gave a report of a case of tetanus. Early in the winter dozens of newspapers published a sensational article, describing the remarkable *cure* of a case of tetanus (in a horse) at Zanesville, Ohio. Dr. Callender, who lives in that city, was appealed to by the Secretary to obtain all the facts in connection with the case and report the same at this meeting of the Association. Dr. Callender's report is as follows:

"Some time during November, we had considerable excitement in this city over a case of tetanus treated by my neighbor veterinary surgeon. In some manner this case got into the papers and was heralded the length and breadth of the country as being *cured* by the hypodermic injection of prussic acid. The trouble was that the initial description of the case was written too soon, but, nevertheless, it was reported in papers from New York to at least Chicago and St. Louis as *cured* and hundreds of comments written upon it. Dr. Gribble has asked me for information, so I will tell you all I know of the case. I did not see the case until after the second dose of prussic acid had been given, but the attending veterinarian gave me the following history of the case: He said he was called in to see the patient on a Tuesday, and had given four tubes of tetanus antitoxin each morning and evening on Tuesday, Wednesday and Thursday, making twenty-four tubes in all in the three days. On Friday morning he thought the horse ought to be destroyed, and so informed the owner as the animal had gotten worse very

rapidly and was in apparent great agony. The owner said 'destroy him'; and to do this the attending veterinary surgeon first injected into the trachea one drachm of C. P. prussic acid, and, excepting for a few gasps, the horse showed no sign of its effects, let alone dying. Then one and one-half drachms of same was injected into the jugular vein, and still the horse did not die; he got quieter, his muscles relaxed to some extent and he took some nourishment. This is when I saw the horse; he was not very excitable; was trying to get some blades of hay in his mouth and could open and shut his teeth about three-quarters of an inch. He got worse again next morning, and I do not know whether more prussic acid was given or not, but the animal died Sunday. Nothing in the case shows any remarkable discovery, as stated in the papers; and as for the cure, it was decided as a fact one day too soon."

Considerable discussion followed (tetanus can always bring that) on the disease itself, its prevention, its great mortality, the failure of antitoxin after the disease has advanced sufficiently to be recognized, as well as the doubt of C. P. prussic acid having been used in this particular case. In fact, is it possible to obtain *chemically pure* prussic acid outside of a laboratory? That usually sold is only a 2 per cent. solution.

Dr. W. Shaw exhibited the testicle of an elephant, which some years ago he had assisted in removing. He told the reasons why the animal was castrated, described the difficulty and labor of the operation, the especial instruments manufactured for the purpose and especially the great care in arranging an apparatus for confining the great brute.

Dr. Shaw also read a short paper on "Forage Poisoning Affecting the Larynx," being the report of some cases seen by him in consultation with Dr. Pollock.

FORAGE POISONING IN WHICH THE LARYNX WAS AFFECTED.

By WALTER SHAW, Dayton, Ohio.

"On Feb. 23, 1902, I was called by Dr. Pollock, Miamisburg, O., in consultation concerning some horses and mules in Franklin, O. On Feb. 18, the owner noticed that the animals breathed with a loud and unnatural sound when he led them to and from the watering place. He summoned Dr. Pollock, who found, on examination, five horses affected. When inactive, their pulse, respiration and temperature were normal; they were anæmic and emaciated, hair harsh and standing, digestion impaired and disordered. In slow action these horses would roar; when trotting they would fall prostrate, and in a few cases blood

would issue from their distended nostrils. After a few moments of inaction these organs would again perform their functions normally. The doctor administered a laxative, an alterative and *nux vomica*, if my memory serves me correctly. On the day I was summoned three had already died and six new cases were discovered. In the evening, when Dr. Pollock and I reached the place, we found that twenty horses and ten mules were afflicted to a greater or less extent. These animals had been at work on the electric road along the canal prior to their confinement for winter. They were fed and sheltered in a squalid building, which had been erected and used for an ice house on the bank of the canal. Foul and nauseating odors emanated from these quarters; the building had no protecting floor and the manure had been allowed to accumulate to a thickness of 18 or more inches. Along the west, north and east sides of the building, horses and mules were tied. On the outside of the western wall, manure had been heaped to a height of six feet. The south side of this building was filled with corn-fodder, which had been sown and cut green and hauled in when it was wet. Consequently, it fermented and partially moulded; the ears could easily be crushed in the hand. The stock had been fed on this unwholesome material for a period of a month or six weeks. There was a noticeable absence of all sanitary conditions and the provender unfit for any animal. We examined the horses affected and found the symptoms as aforementioned. We unfastened one horse and turned him in a circle three times, at which time he roared and became so enervated that he gave signs of falling; but in the short time of fifteen minutes he regained his strength and commenced to eat again. The sanitary condition of the water which they drank was vouched for. We directed that the animals be stationed in another building and the food changed to the best quality of hay, oats and bran. The animals were not moved, however, but the building was thoroughly cleansed, ventilated, and wholesome food provided. To each horse and mule a pint of linseed oil was at once administered. *Nux vomica*, fl. ex. $\bar{\text{3}}$ i, three times a day; hyposulphite soda, $\bar{\text{2}}$ iv, at night and morning. At noon nitrate of potas., $\bar{\text{2}}$ ij, carbolic acid, $\bar{\text{3}}$ i. This was continued for several days.

"After this treatment was commenced, three or four horses died, but no deaths occurred among the mules and no new cases of roaring developed among the horses. I believe that this disease was caused by vegetable or forage poisoning, and by the

inhalation of noxious odors. I am not prepared to state why the larynx was affected. By an injection of belladonna into the larynx, the intensity of the symptoms was reduced, and the animal could trot with little evidence of distress. It is possible that a greater number of those horses would have roared if they had been compelled to exert themselves to greater efforts."

These interesting cases were well discussed, almost every member having had somewhat identical cases, the *why* being hard to get at.

Dr. F. F. Sheets read an interesting original paper entitled "Inflammation: A Treatment." This paper dealt especially with the materials, manufacture and uses of that class of remedies on the market as antiphlogistine, anticalorine, antithermoline, anti-itis and anti everything else. There is no doubt but this method of treating certain inflammations is excellent, but their indiscriminate use as used by some is rather laughable.

INFLAMMATION—A TREATMENT.

By F. F. SHEETS, V. S., Van Wert, Ohio.

"For external application, recommended for cases of an acute inflammatory character, there are upon the market numerous silica preparations, named according to the fancy of the firm introducing them. In appearance these preparations most nearly resemble light colored builder's putty; both in consistency and color. While they remind one as being ointments, still they are not such.

"Regarding convenience of use in this form, it bears that relation to the stable bucket filled with clay which the alkalioid does to the raw drug.

"I find opinion differs widely as to the merits of this preparation, however; most physicians in my locality are using some form of it. As yet, for the more extensive use of the veterinarian it has perhaps not been generally tried, since the price is such that to use it in such quantities as are necessary for results makes the cost mount beyond the practical figure, at least it is so with us, who are rural practitioners.

"Advocates of this form of treatment recommend it especially for application in pneumonia and pleurisy, also in glandular inflammations, sprains, bruises, boils, bronchitis, periostitis, synovitis; in fact, inflammatory and ulcerative conditions of all kinds.

"So we find that, but for colic, it will scarcely be necessary for us to longer be bothered with the medicine case; just a can

of this silica preparation and we are ready to do battle with equine ills.

"As to its therapeutic action, we are told that first of all it is antiseptic; that it has the power of a hygroscopic in the removal of fluids from the tissues by a vague process of endosmosis; that the effects of bleeding can be obtained through this stimulation of superficial capillary action.

"The action suggesting itself to my mind is rather that of perfect mechanical retention of body heat and consequent circulatory response. It is well to have any application antiseptic, though I am inclined to believe the menthol, thimol and kindred antiseptics, said to be employed, act in a passive, rather than in an active way. The only medicinal action which can be ascribed to clay is that of absorption. I find a single author who says clay has some affinity for ammonia and organic matter. The form of silica used in these preparations as they are placed before the profession is china clay or kaolin. Pipe clay may be substituted, with a darker mixture resulting, but possessing, no doubt, all the essential qualities of the kaolin. I have been putting together for use in my own practice a mixture which appears identical in all properties with those I have used under proprietary names. According to the consistency desired, we use kaolin, five parts; glycerine, from two to four parts, together with the desired quantities of any suitable antiseptics, either liquid or powdered. A representative formula would be:

"R Kaolin, No. v.

"Glycerine, No. iii.

"Creolin, ξ iv.

"Glycerine is said to be somewhat antiseptic, and as for additional ones, in our ability to choose according to the required use and individuality of the case, lies the advantage over dictated preparations; for, as far as I can see, almost any desired action of soothing external application may be devised. Dilute glycerine may be employed, and, no doubt, we have used such products. However, to be prepared consistently with the original idea of absorption, the glycerine should have every possible particle of water driven from it and heat employed in mixing the constituents.

"And, now, as to the wonderful results possible: A physician in an adjoining county to my own tells me that he '*killed and removed*' a spavin by repeated applications of the product of the original promoters, and no doubt one would gain almost as favorable impression by relying on some of the proprietary liter-

ature which falls into our hands. However, do not blame me for the absence of the spirit of professional progress if I see some limitations to the '*drawing power*' of these silica preparations. I believe if we care to use such an agent in our work at all, it should be prepared under our own direction, since the cost is reduced, approximately, eighty per cent., since we can administer according to the special requirements of the case in hand, and no veterinarian should use any preparation the components of which are unfamiliar to him. An additional advantage lies in the peculiar consistency of the mixture, which makes it suitable for use where other forms of medication are often somewhat impracticable. For, however much solidification may occur in the application, we may be assured the tissues will not be thus affected, and yet our agent, however crust-like it may have become, will almost dissolve as you wash the part preparatory for renewed application."

After a short debate, as it was getting late, we adjourned to meet to-morrow at 9 A. M.

WEDNESDAY, JAN. 13.

Morning session convened at 9 A. M., Dr. J. H. Blattenburg in the chair. Dr. Howe stated that it had been forgotten yesterday to arrange for the printing and distribution of the new By-Laws. A resolution was duly adopted, instructing the Secretary to classify and arrange the Constitution and By-Laws as adopted; to have 500 copies of the same printed, and one copy to be mailed to each member as soon as possible; after which the Committee on By-Laws were given a vote of thanks and relieved from further duty.

The Secretary reported that since our last session we had lost by death one of our members—Dr. D. B. Cliffe, of Marion, Ohio. The Chair appointed a committee to draft suitable resolutions, which reported as follows:

"WHEREAS, It has pleased Almighty God in His infinite wisdom to remove from our midst Dr. D. B. Cliffe, of Marion, Ohio, member of this Association, and our esteemed friend and brother; Therefore be it

"*Resolved*, That we, the members of the Ohio State Veterinary Medical Association, express our sympathy for the family of the deceased brother by recording these resolutions in the minutes of the meeting and publishing them in the veterinary journals; and be it further

"*Resolved*, That the Secretary be instructed to send a copy

of these resolutions to the family of the deceased member.

“WALTER SHAW,
“W. R. HOWE,
“J. V. NEWTON, } *Committee.*”

Reports of cases were presented by Dr. Rowe, but he being absent, the same was read by the Secretary. Quite a discussion took place over Case II. as to what it was.

DR. ROWE'S CASE REPORTS.

“IRREGULAR STRANGLES.—*Case I.*—A couple of years ago, I was called to a four-year-old gelding. I found a small abscess in the submaxillary space. I opened it and a small amount of pus came from it. Gave usual treatment, and horse did well, until one week afterward, when the owner informed me that there was a swelling on the inside of the thigh. Again opening this abscess and leaving medicine, I informed the owner that I thought all would be well now. About two weeks afterward I was surprised to find another abscess in the submaxillary space. After attending to him this time, he did well ever since.

“*Case II.*—A four-year-old mare, having worked steadily, was brought in on Friday evening and given hay. In a short time she was to be watered, but could not use hind quarters. Gave her water in bucket, drank freely, ate grain and hay. Gave soda hyposulph. and nuxes vom. Sunday she appeared well and feeling good, but on Monday morning there was a swelling on each shoulder. Opened them on Tuesday, continuing nux and hyposulph. for several days, brought her out all right. I cannot understand the partial paralysis.

“VOMITION IN A MARE.—*Case III.*—I was called to the barns of the Cleveland-Sandusky Brewing Co., on a Sunday morning during April, 1903. I inquired as to the actions of the horse and was told that she acted colicky. I hurried to the barns, but found the mare in the yard, with head drooped and seemed to gag. Soon she had a copious vomition and seemed to be relieved greatly. She had no more vomitions after that and did well. I was told she had vomited four times previous to my arrival and was witnessed by at least eight people and I was convinced by seeing four other spots in the yard where she had vomited. She threw out about one-half gallon at a time, coming from nose and mouth at the same time. The trouble was due to her drinking enormous quantities of water, being untied and left to drink at liberty. She had been having colic nearly every morning for some time, but a little walk brought her all right.

Probably these cases are old to some of you, yet they were interesting to me."

"Heroic Treatment,"* was the title of an essay read by Dr. I. A. Ruby. This paper showed that the writer had that peculiar talent of making an essay on a dry subject amusing, as well as instructive and entertaining. The doctor was personally complimented, his paper well debated and ably defended; even those who oppose large doses admiring a man who practiced, in the face of adverse criticism, what he honestly believed best for his patient and client.

In some way the debate on this paper ran into a discussion on the general use of the catheter, the majority condemning it as useless, dangerous and unnecessary, so many present preferring digital pressure, and always practiced it. One thought a catheter could be made aseptic; another said it *could* be, but from his experience with fellow-practitioners, he had failed to meet many who were very aseptic themselves.

The next paper read was "Quittor and Its Treatment,"* by Dr. N. Wells Hillock.

This paper showed that its writer was well acquainted with his subject, and all were sorry that we did not have the real subject for the Doctor to have demonstrated on. While it is true the paper was not debated upon very much, this might have been because so few of us had had sufficient experience with the surgical technique to debate it intelligently; nevertheless, the writer was taken to be an intelligence bureau on the subject, and innumerable questions were asked, which he cheerfully answered.

The Chair called for the report of the Committee on Contagious Diseases. The chairman of this committee (Dr. Fischer) being unavoidably absent, his report was read by the Secretary. The shortness of this report is explained by the fact that the committee forgot their appointment or failed to read March, 1903, AMERICAN VETERINARY REVIEW.

REPORT OF THE COMMITTEE ON CONTAGIOUS DISEASES.

"Mr. President, and Gentlemen:—

"As chairman of the committee appointed for reporting on the prevalence of contagious diseases in Ohio, I respectfully submit the following report.

"The diseases that have appeared in Ohio during the past

* Will be published in an early number of the REVIEW.

year and which have come under our observation, might be classified as follows :

"Among horses : Glanders and coital exanthema, influenza, and reports of contagious pleuro-pneumonia by a few veterinarians. Among cattle : Tuberculosis, actinomycosis, infectious diarrhœa, infectious keratitis, rabies, anthrax. Among sheep : Scabies, nodular disease (so-called), and lung worms. Among swine : Hog cholera and swine plague. Notwithstanding newspaper and other reports of outbreaks of foot-and-mouth disease, and even contagious pleuro-pneumonia among cattle, no dangerous exotic diseases have occurred in this State during the past year. The appearance of anthrax in a small herd of cattle in Summit County, and the discovery of coital exanthema among a number of stallions and breeding mares, in Defiance and Paulding Counties, is of especial interest. The fact that Texas or Southern cattle fever did not make its appearance during the past year should also be noted. Rabies in dogs, it seems, has been more common than usual. The same may be stated in regard to the appearance of the disease among cattle and swine. During the spring months, influenza was quite prevalent among horses of the State. The State Board of Live Stock Commissioners, during the year just passed, ordered the destruction of thirty-eight horses affected with glanders, and of thirty-three hogs that were exposed to infection by rabies.

"PAUL FISCHER, *Chairman*."

Some little arguments were indulged in, in reference to swine diseases and rabies, but antipodes will never meet ; independent investigators will settle the matter some day.

Next came the report of the Committee on Veterinary Progress. This was read by its chairman, Prof. D. S. White, and from the paucity of our usual committee reports, one may be pardoned for calling especial attention to this one, as one showing care, study, and a desire to do the allotted subject justice, and it is hoped that future committees will "go thou and do likewise." The report speaks for itself.

REPORT OF THE COMMITTEE ON VETERINARY PROGRESS.

"*Colleges*.—Strictly speaking, there are three kinds of veterinary schools in the United States. First, those which are wholly proprietary, self-sustaining institutions, dependent upon student fees for their maintenance ; second, those which are integral parts of either a State university or an endowed university ; third, schools which are specifically provided for by direct State legislative appropriations. Of this latter class, but one

representative exists in this country. The schools which were simply affiliated with universities have passed away. Practically speaking, and from the standpoint of organization and support, but two kinds of schools are extant, viz.: those supported by taxing the people, directly or indirectly, and those which support themselves. As to the future of each of these two sorts of institutions, the history of the medical profession in this country furnishes some helpful data in a prognostic way. The American Association of Medical Schools has assumed control of the standards of entrance requirements and the curricula of the medical schools belonging to the Association, has caused these entrance requirements to be raised, graded the courses and lengthened the time of study to four years. This has seriously, from a commercial standpoint, handicapped the proprietary medical school, especially the inadequately equipped institution, by reducing its student body—in some cases 75 per cent., and increasing its expenses. The introduction of the practical laboratory method of instruction, furthermore, has called for costly apparatus and instructors who are specialists, greatly reducing the net income. For the medical profession this has been a good thing; for the proprietary medical school a catastrophe. To save themselves, in some cases, these schools have been forced to appeal to be taken in by a university having no medical department. If the university were happily located and happened to have a surplus which could be used to strengthen its acquisition by employing better teachers, apparatus and facilities, it was a good thing for both the profession and the school.

“Within the next decade the old style medical schools will have disappeared as such and from out their ruins will arise the medical school of the future—an institution built upon a broader basis and dependent for its maintenance upon the State or private endowment. Medicine in the United States will then be elevated from a mere trade to a real profession. As to the future of our veterinary schools, one may draw his own conclusions. History repeats itself. There are about eleven veterinary schools in the United States. Of these eight are proprietary and three State schools. In the eight proprietary institutions are now enrolled 600 students (estimated); in the three State schools 245 students. There averages about 75 students to each proprietary school, and $83\frac{1}{2}$ students to each State school. The requirements for admission to the proprietary schools are not accurately determinable, the minimum requirement being often

a vague and elastic statement to the effect that the applicant for matriculation 'must possess sufficient English education to understand instruction given.' Of the three State schools, two require high school training for the doctorate degree, and the third proficiency in the common branches as determined by examination. In the eight proprietary schools the length of course averages about eighteen months; in the State schools two average twenty-seven months and the third offers a thirty-six months' course. Lack of space forbids a detailed comparison of the course given in these schools, but from a study of the announcements, generally speaking, the quantity and quality of the instruction is greater and better than formerly in *all* the schools. Unfortunately, however, the statements in the catalogue and the facts in the case do not always harmonize. In all of the schools but two, the courses are graded ones. Taken as a whole, it may be stated that while the conditions in regard to our schools are far from ideal and need much in the way of supervision, the opportunity for a student to obtain an education in veterinary medicine is far better to-day than it was even five years ago. What veterinary schools need more than anything else is supervision. While this supervision should be State, it might be association censorship. A board of censors could be appointed by the American Veterinary Medical Association, made up of representatives of its own body, the State associations and the college faculties. The Association has made certain requirements of its candidates for admission to the organization by setting a standard of school from which they shall have graduated. Unfortunately, there are two manifest weaknesses, viz.: the standard is too easily conformed to, and there is no formal attempt made to officially investigate the statements set forth in the annual announcements of the colleges. Justice can not be obtained from a court which depends wholly upon the defendants word as to whether he be guilty or not guilty. Each must be given a fair trial. In our opinion, it is within the province of the Ohio State Association to determine the status of the colleges of this State, and though it may not be able to regulate or bring about immediate reforms, it can set a standard of admission to its privileges—it can determine who shall constitute its membership. The standard should be high enough to look up to, not down upon. It should encourage the colleges to progress, not remain stationary—retrogress. This Association should be the strongest factor in veterinary policies and politics in Ohio.

"*Veterinary Police*.—It is within the power of the municipal health boards to appoint veterinarians as inspectors of dairies, slaughter houses, markets, meat shops, etc. This is, however, not obligatory upon the boards. In Columbus the city dairy inspector is a veterinarian. It is very likely that within the next few days a veterinarian will be appointed meat inspector. Under present conditions in regard to meat and market inspection in this city, the work of the inspector cannot be made thorough enough to be of great hygienic value. Two things are needed: 1. To increase the number of inspectors so that the territory could be covered; 2. To abolish all proprietary slaughter houses and establish a central municipal abattoir where all slaughtering would take place. In this establishment meat inspectors would be stationed. Eventually, in our cities *market inspection* and *meat inspection* should be differentiated. Although both have a common interest in protecting the public against disease and fraud, their respective functions should not become confused. The establishing of public slaughter houses would be of the greatest benefit to the citizen and farmer. The citizen would be protected against diseased meat and its products, substitution of one kind of meat for another, and the fraud of having imposed upon him low grade meat at high grade prices. It is a fact that *apparently* healthy meat may when eaten prove not only unhealthful but toxic. The farmer would be protected against unscrupulous butchers and cattle dealers but would also find an avenue for the disposal of his cattle afflicted with local actinomycosis or tuberculosis. A proper system of meat inspection would, by assisting the State veterinarian and his deputies in veterinary police work, be the most important and reliable factor in the early determination of a disease outbreak. As all the offal from such an abattoir would be promptly rendered innocuous, the further spread of a given disease from that focus would be estopped. A community without a systematic meat (not market) inspection is nothing more than a mechanism for the perpetual propagation of diseases due to bacteria and animal parasites. It is our duty to assist in the education of the people in this regard. When they learn it is for *their* benefit and not for ours directly, they will set to work the proper mechanisms to cause these conditions to materialize. Such a system is to-day in vogue throughout cultured Europe. In this particular we are behind most civilized nations. Some progress has been made in having had placed in the hands of the State Board of Agriculture the control of the veterinary police of the

State. This report of this Board should interest every practitioner.

"Prosecution of Illegal Practitioners.—Compared with some of the other States, Ohio has been feeble in enforcing her veterinary law. With a State so rich in legal talent, it seems often possible for the guilty to escape punishment. As the law now stands, there are two things needed to secure its enforcement: 1. A person who can look after the prosecution of cases; 2. Money to assist in the prosecution. In the opinion of the Committee a part of the surplus in the treasury of this Association could be wisely expended in investigating and prosecuting all persons practicing veterinary medicine illegally. A few successful prosecutions leading to conviction and rustication would cause a veritable stampede of fakirs, dentists, empirics and medicine venders from our shores. It is the duty of this organization to do something active, aggressive and fruit-producing along this line.

"Literature.—Our literature in English during the past year has received but few additions. A few works, however, are worthy of note. The fifth volume of the series of Dr. Law's text-books on the theory and practice of veterinary medicine is now in print. It deals with parasitism. Like the others of the series it is a most thorough digest—more of a hand-book for reference than a text-book for students. Mr. Reeks, M. R. C. V. S., monograph on the colics of the horse is the most eminently practical and comprehensive treatise on this important subject in English. No practitioner could read it without profit. Dr. M. H. Reynolds, of the University of Minnesota, has just published a book entitled 'Veterinary Studies for Agricultural Students'. While, as its title indicates, it is not designed for veterinarians, it contains most modern suggestions in a very concise form. The description of 'Septicæmia Hæmorrhagica' in the ox, which is well illustrated by half-tone cuts from photographs, is obtained in this booklet first hand, the author having had a great deal of experience in the field with this fatal malady. Walley's book on 'Meat Inspection' has been thoroughly revised and enlarged. It is recommended to all veterinarians interested in sanitary police work. A book designed for the use of agricultural students written by Mr. Thompson, M. R. C. V. S., is quite a comprehensive volume for one of its scope. The author, a man of fifty years practice, describes a number unique cases which have come under his unusually long period of observation. In some scientific respects, however, it is faulty, the individual opinion

of the author cropping out now and again in contradiction to many well-established facts. For instance, he rather disputes the presence of the spores of *bacillus tetani* in earth. He considers dry earth a valuable wound dressing. In another sentence, however, he speaks of the rarity of tetanus in horses in his locality, having seen but a few cases in forty years! Evidently the soil of this region is barren of this pathogenic germ. English veterinary literature will receive a most valuable contribution when Ostertag's 'Fleisch Beschau' is available to us in our own tongue. Dr Mohler, of the Bureau of Animal Industry, is translating the work. The new edition of Dr. W. L. Williams' translation of Pfeiffer's 'Operationskursus', 'Americanized' by numerous changes, omissions and additions, is now on the market. While intended primarily for college students, it is none the less valuable for the busy practitioner.

"*Anatomy*.—Through the persistent efforts of the professor of comparative anatomy in our State University, veterinary anatomy has received some contributions of inestimable practical value. The most accurate and painstaking study of the topographic anatomy of the stomach, the course and relationship of the œsophageal groove, and the determination of the normal position of the kidneys in the ruminant are a few examples of the results of his research and the profits of his teaching. When printed and made available to the profession at large in book form, our great need of a work of this kind—an anatomy 'which will do the busy practitioner some good'—will be adequately filled.

"*Surgery*.—For the past three years the surgical department of the State University has been studying the prevalency of podotrochlitis (navicular disease) among horses in Columbus. In all, 130 post-mortems were made. The results in brief are: (1) That 53 per cent. of the feet examined were found affected; (2) that neither the conformation of the horse nor the form of hoof had any etiological influence; (3) that in advanced cases the hoof form changes; (4) that podotrochlitis evidently begins in the *bursa podotrochliaris*; (5) ringbone and sidebone are frequent accompanying diseases; (6) pronounced lameness may be absent. The aseptic method of treating *hæmatomas* by simple incision, gently removing clots by massage and subsequent washing with antiseptics (no syringing) has proven more successful than any other treatment tried. The use of the actual cautery in the treatment of fistulæ of the foot ('quittor') has shown itself to be efficacious. Among the unique surgical operations

the one suggested by Dr. Williams for 'poll evil' deserves mention. It consists of draining the *supra-atloid bursa* anteriorly, by open wound, the crest of the occiput being channeled by a Luer's forceps. Healing is obtained in a fortnight. His book fully describes the operation.

"*Medicine*.—The value of prussic acid in the treatment of tetanus is again being talked about. The celebrated Zanesville case, which furnished so much 'copy' for the lay press, on investigation, has proven to be a myth. The use of air sterilized by being passed through cotton and forced into the udder in cases of parturient paresis has given as satisfactory results as iodide of potash. The use of formalin, intravenously injected, in the treatment of septicæmia in horses, deserves mention. Dr. Brumley's experiments will shortly appear in print. They were directed toward proving this point.

"*Necrology*.—Within the past few months our profession has lost several of its most celebrated members. Most noteworthy are the deaths of the two greatest authorities on internal veterinary medicine, Nocard of France, and Dieckerhoff of Germany, and that of Bayer of Austria, our greatest surgeon. All were men of great mentality. Their influence was greater than their respective spheres. Although the clay has claimed their bodies, the works they accomplished will ever live as monuments to their fame.

DAVID S. WHITE, }
 "W. R. HOWE, } *Committee.*
 "F. F. SHEETS, }

The Secretary read a sort of history of the Association, commemorating its twenty-first year, as follows :

BRIEF HISTORY OF THE ASSOCIATION.

By Secretary WM. H. GRIBBLE.

"*Mr. President and Gentlemen :*

"This being the twenty-first annual session of our Association, we thought perhaps you might be interested in knowing some of its history, previous to its attaining the age of majority. Your Secretary, being in possession of the books of record, is of course in a better position to know this than any other member, so has taken the risk of tiring you.

"During the early part of the year 1883, some one or more persons agitated the question of forming a State Veterinary Association ; but who these agitators were, the records fail to enlighten us upon. A Mr. Daniel's name is mentioned, and he seems to have been considerably interested in the matter, but

who he was, and where he was from, I cannot tell you, as with all his interest the records do not show that he ever became a member.

On July 24, 1883, pursuant to a call from somewhere and somebody, about twenty-five veterinary surgeons met in the parlors of the Neil House, Columbus, Ohio, and effected the temporary organization of the Ohio State Veterinary Medical Association by selecting Prof. Townshend as Chairman and Dr. Cotton as Secretary.

"On permanently organizing, Dr. W. C. Fair, of Cleveland, was elected its first President, and Dr. J. M. Waddell, of Columbus, its first Recording Secretary. Graduates and non-graduates were alike eligible to membership; but as early as 1887, the non-graduates had shown their lack of interest in an association, by all but one having been suspended for non-payment of dues; so in 1889 a change was made in the By-Laws, so that after that date all applicants must be graduates. The one non-graduate remained a member until 1903, when he also allowed himself to be dropped from roll-call.

"The Association started off with a set of officers named: President; First Vice-President; Second Vice-President; Third Vice-President; Recording Secretary; Corresponding Secretary; Treasurer; and a Board of three Censors.

"Although no amendment is recorded of abolishing the offices of recording and corresponding secretaries, or rather of merging the two into one, we find that in the election for Jan., 1888, only a secretary was elected, and such has been the rule ever since.

"The Board of Censors seem to have been for the purpose of examining non-graduates only, and the amendment of 1889 having restricted the qualification of applicants to graduates, in 1890 the Board of Censors was abolished.

"In the year 1893 no annual session was held, but why the records fail to tell. During the first few years there seems to have been no regular or stated times for meeting, as three meetings a year were sometimes held.

"While the organization was effected July 24, 1883, Jan. 8, 1884, is recorded as the first annual session; and Dec. 27 of the same year as the second annual session; while the records call Sept. 2, 1885, and Jan. 12, 1886, the third annual session; but from then to now the January session has always been named the annual session and numbered consecutively.

"In the twenty-one years of its existence the Association has

had fifteen presidents, five secretaries ; but only three treasurers. Dr. T. B. Hillock served in this latter capacity for the first three years, and, not absconding with the funds and jewels, has again for the last fourteen years been trusted with the cash bag. The present Secretary has been honored with his office since Jan. 14, 1891 ; of the original organizers, only five are still members, viz : T. B. Hillock, W. R. Howe, W. A. Labron, J. V. Newton, W. E. Wight. At the commencement of this session there were 110 names on the roster, yet we had only forty-five members in good standing. Of the one hundred and ten, seven have died, ten have withdrawn, three were expelled ; forty have been suspended for non-payment of dues and five more are now in arrears. Of the original twenty who formed the Association in 1883, five died, four withdrew, one was expelled and ten were suspended. There were eighteen admitted during 1884, 1885 ; two died, three withdrew, one was expelled, and the other twelve were all suspended for not paying dues ; and so it is, down through all the years the suspension for non-payment of dues has been our great drain ; this cannot possibly be because of our annual dues, an insignificant \$1.00 per year. It is to be hoped that if the proposed new By-Laws be adopted, that part of this loss will be stayed, as in them the Secretary is ordered to notify every member twice during the year, and this surely will keep the matter of arrearage fresh in his mind.

"The colleges represented by our roster as near as we can determine are as follows : Ontario, 77 ; American, 7 ; Ohio, 5 ; Ohio State University, 3 ; Chicago, 3 ; Montreal, 1 ; New York, 1 ; Holland, 1 ; Vienna, 2 ; non-graduates, 10. During one session twelve new members were elected, all graduates from the same college.

"The colleges represented by the new members joining at this session are : Ontario Vet. College, 6 ; Chicago Vet. College, 4 ; Ohio Vet. College, 3 ; New York State Vet. College, 2 ; Ohio State University, 2 ; Indiana Vet. College, 1.

"At the annual session for 1895, the Committee on Veterinary Progress reported in favor of higher and uniform matriculation at veterinary schools, and that the course of study at such schools should be not less than three years of six months each, etc. ; but it has taken until now, 1904, to embody this fact in our By-Laws and say that henceforth all applicants to this Association, graduating after this year, must be graduates of three-year colleges, and must have passed the Ohio State Veterinary Examining Board. Surely the mills of the gods grind slowly.

"While for years our annual sessions have been held in Columbus, up to 1901 it was our custom to meet in hotels and private halls; but that year, and since, we have met at the Veterinary Department of the State University. Of course there are arguments used in opposition to this meeting place; nevertheless, the records show greater attendance and more enthusiasm since meeting there, and this is due in part to the fact of adding clinics at these sessions.

"We are now strong enough in numbers; have over \$400 in the treasury; that if every member will put his shoulder to the wheel, do his share of the work as it may be asked of him, and do it as if it were a pleasure, and not labor, then membership in this Association will be a coveted honor, and our united efforts show professional success."

NEW MEMBERS.

New members joining during this session were: J. L. Faragher, (Ontario), vouchers, F. F. Sheets, W. Shaw; Constant Lake, (Ontario), vouchers, L. P. Cook, W. R. Howe; Geo. Freese, (Ontario), vouchers, F. F. Sheets, J. V. Newton; G. C. Webb, (Ontario), vouchers, J. V. Newton, E. R. Barnett; Sol S. Snyder, (Ontario), vouchers, J. A. Meagher, P. A. Dillahun; A. D. Gemmill, (Ontario), vouchers, J. H. Blattenburg, F. E. Anderson; J. L. Axby, (Chicago), vouchers, L. P. Cook, J. A. Meagher; Fred Miller, (Chicago), vouchers, F. E. Anderson, J. H. Blattenburg; A. H. Collins, (Chicago), vouchers, J. V. Newton, F. F. Sheets; E. R. Hinkley, (Chicago), vouchers, S. Sisson, L. W. Carl; J. S. Lake, (Ohio), vouchers, W. R. Howe, L. P. Cook; E. O. Hess, (Ohio), vouchers, L. P. Cook, W. R. Howe; W. A. Axby, (Ohio), vouchers, L. P. Cook, W. R. Howe; W. E. A. Wyman, (New York State), vouchers, W. E. Clemons, F. E. Anderson; D. H. Udall, (New York State), vouchers, David S. White, W. H. Gribble; C. H. Sater, (Ohio State Univ.), vouchers, T. B. Hillock, S. Sisson; H. W. Brown, (Ohio State Univ.), vouchers, S. Sisson, T. B. Hillock; H. W. McMillen (Indiana), vouchers, Walter Shaw, F. F. Sheets. Each in turn was called upon and made his little speech.

It was proposed, duly debated and acted upon that during the first evening of the next annual session that we have a social session, each one to pay his apportionate share of the expense, and that the Secretary be specially instructed not to forget this important matter and arrange for the same.

Somewhat of a surprise was now presented to the Association in the form of a proposed veterinary law. It was duly debated

as to whether we should consider this proposed law, or adjourn for dinner and then meet in a session of clinics. It was finally decided to consider the law, drop the clinic, and not go to dinner as it was too late. Adjournment was had for twenty minutes for coffee and sandwiches, which were obtained in the University Buildings.

Reconvened at 2.15 P. M.

The proposed new Veterinary Act was read by the Secretary as follows :

“PROPOSED ACT

“To amend and supplement Sections 4412-1 to 4412-10 inclusive of the Revised Statutes of Ohio as passed May 21st, 1894.

“SECTION 1. Be it enacted by the General Assembly of the State of Ohio the sections 4412-1 to 4412-10 inclusive of the Revised Statutes of Ohio as passed May 21st, 1894, be so amended and supplemented as to read as follows :

“SECTION 4412-1. All persons who now, or shall hereafter, practice veterinary medicine or surgery in the State of Ohio, shall be examined as to their qualifications by a state board of veterinary examiners, to be appointed as hereinafter provided.

“SECTION 4412-2. No person shall practice veterinary medicine, surgery, or dentistry in any of its branches in the State of Ohio, without first complying with the requirements of this act.

“SECTION 4412-3. Any person shall be regarded as practicing veterinary medicine, surgery or dentistry within the meaning of this act who shall use the words or letters, “Doctor”, “Dr.”, “Professor”, “Veterinary Surgeon”, “Veterinarian”, “V. S.”, or “D. V. S.”, or any other title, in connection with his name, which in any way represents him as engaged in the practice of veterinary medicine, surgery or dentistry in any of its branches, or who shall prescribe, or recommend for a fee any drug or medicine, appliance, application, operation or treatment, of whatever nature, for the cure or relief of any wound, fracture, bodily injury, infirmity or disease of any animal.

“SECTION 4412-4. Any person who successfully passes the examination before the state board of veterinary examiners shall receive from such board a certificate signed by the members thereof, which certificate shall state that the person to whom it is given has passed the prescribed examination and is competent to practice veterinary medicine, surgery and dentistry. A copy of such certificate shall be recorded by the clerk

of the board in a book kept for that purpose which shall be open to public inspection. The person receiving such certificate shall, before entering upon the practice, leave his certificate with the probate judge of the county in which he resides for record. The probate judge shall record the same in a book kept for that purpose, and indorse on the margin of the record and on the certificate the time he received the same for record, and make a proper index of all such certificates recorded by him. In case of a change of residence the owner of a certificate shall have the same recorded by the probate judge of the county into which he removes. The probate judge shall receive for recording and indexing each certificate, fifty cents, and for certified copies, the same fees as are allowed by law for copies and certificates of records kept by the probate judge, to be paid by the holder of the certificates.

"SECTION 4412-5. Persons who have passed the requisite examination and received a certificate from the state board of veterinary examiners, and have continuously practiced veterinary medicine and surgery for five years, and no others, shall be qualified and be entitled to be employed as veterinarians by the state board of agriculture, state live stock commission and state and local boards of health.

"SECTION 4412-6. The state board of veterinary examiners shall consist of three members. Every year the Governor shall appoint a member for the term of three years, beginning at the expiration of the term of the next out-going member of said board as it is now constituted, said appointments to be confirmed by the Senate. Vacancies in said board shall be filled by appointment for the unexpired term. The members so appointed by the Governor shall be graduates of reputable but of different veterinary schools or colleges, and men of superior learning, personal skill and good moral character, and who are legally qualified to practice veterinary medicine, surgery or dentistry in the State of Ohio.

"SECTION 4412-7. The board shall meet at least twice a year—in April and in July—in the city of Columbus. The officers of the board shall be elected from its members and be a president, secretary and treasurer, who shall hold office for two years or until their successors have been elected and qualified. The secretary shall keep an accurate record of the business transacted and of the certificates issued as heretofore provided. He shall collect the fees to be paid by the applicants for examination and pay the same over to the treasurer and shall perform

such other duties as the board may prescribe. He shall keep a correct account of all moneys received and disbursed.

"SECTION 4412-8. The board each shall receive five dollars per day while in session and his actual expenses, to be paid by the treasurer out of the fees paid by the candidates for examination.

"SECTION 4412-9. A certificate shall be issued only when the board is satisfied that the candidate examined is well qualified and entitled to a certificate.

"SECTION 4412-10. Candidates shall present themselves for examination at the regular meetings of the board and shall pay for each examination the sum of ten dollars, which shall accompany their application in writing, and be paid to the secretary of the board previous to the regular meeting of the board. One half of the ten dollars shall be returned if the candidate fails in the examination.

"SECTION 4412-11. Whoever shall engage in the practice of veterinary medicine, surgery or dentistry in violation of this act, shall for the first offence, be fined no less than ten dollars, nor more than twenty-five dollars, and for the second offence not less than fifty dollars nor more than one hundred dollars, or be imprisoned in the county jail not more than sixty days, or both. Provided that nothing in this act shall be construed to prohibit any gratuitous veterinary advice or service in case of emergency if rendered by a person not entitled to practice under this act. Nor shall it apply to animal castration or dehorning of cattle. Nor shall anything in this act apply to persons, who, at the time of the passage of this act, hold certificates duly issued and signed by the state board of veterinary examiners in accordance with the provisions of an act, entitled 'An Act to regulate the practice of veterinary medicine and surgery' passed May 21, 1894, to which this act is amendatory and supplementary, excepting the provisions of SEC. 4412-4 of this act relative to the filing of certificates with the probate judge for record, which shall apply to all persons.

"SECTION 2. That said original sections 4412-1 to 4412-10 inclusive of the Revised Statutes, as passed May 21st, 1894, be, and the same are hereby repealed.

"SECTION 3. This act shall take effect and be in force from and after its passage."

As usual, this brought out the pro's and con's of eloquence, but a motion was finally adopted, empowering the Chair to appoint a committee of five, including himself, "to meet at such

time and place as they see fit, to employ an attorney if they think necessary, and with full power to act, in presenting the proposed law to the Legislature." Committee as per the resolution: J. H. Blattenburg, N. W. Hillock, W. R. Howe, J. D. Fair, and H. W. Brown.

A motion was made by Dr. Newton, duly seconded and adopted, "that the Secretary of the Association be added to the committee, to act as its Secretary, and as soon as possible to forward every veterinary surgeon whose address he can obtain, a copy of the proposed law."

No further business appearing, the newly-elected officers now assumed their respective offices. Dr. D. S. White on taking the chair made a few very appropriate remarks.

The question of a semi-annual meeting was talked about, and finally decided that this year we have none. The Secretary was ordered to notify in due time all the members of the time and place of meeting at St. Louis of the American Veterinary Medical Association; and if some necessary business must be transacted, we hold a called meeting at that time.

President D. S. White appointed the following committees:

Veterinary Progress—Dr. S. Sisson, Dr. E. H. Shepard, Dr. F. F. Sheets.

Diseases—Dr. Paul Fischer, Dr. S. D. Myers, Dr. I. A. Ruby.

Clinics—Dr. O. V. Brumley, Dr. N. W. Hillock, Dr. D. H. Udall, Dr. L. W. Carle, Dr. H. W. Brown.

Adjournment.

WM. H. GRIBBLE, *Secretary*.

THE VETERINARY ASSOCIATION OF MANITOBA.

The annual meeting of this Association was held in the Committee Room of the City Hall, Winnipeg, on Wednesday, Feb. 24th, at 8 P. M., the President, Dr. W. R. Taylor, of Portage la Prairie, in the chair.

Members present: W. A. Dunbar, Winnipeg; W. S. Henderson, Carberry; J. H. Lipsett, Holland; C. Little, Winnipeg; W. E. Martin, Winnipeg; R. A. Monteith, Killarney; Hon. D. H. McFadden, Winnipeg; J. McGillivray, Manitou; L. McQueen, Teulon; J. A. Stevenson, Carman; W. R. Taylor, Portage la Prairie; F. Torrance and A. E. Williamson, Winnipeg.

The minutes of the last meeting having been read and adopted, the report of the Secretary-Treasurer and Registrar was presented. This showed the Association to be in a prosperous condition, having a membership of 80, and a cash balance

of \$273.15. The Auditors' report showed the books and accounts to be correct, and, on motion, both reports were adopted.

A letter from Dr. John R. Mohler, of the Department of Agriculture, Washington, inviting the Association to contribute towards the monument to the late Professor Nocard was received, and the sum of ten dollars voted to that purpose.

Dr. J. S. Clark, of Russell, called the attention of the members by letter to the fact that a druggist was permitted by law to sell only a small quantity of spts. frumenti upon a veterinary prescription, and that in one case where a druggist had filled a veterinary prescription for 1 gallon spt. frumenti, the license inspector had convicted him of infraction of the liquor law, and he was fined the sum of \$76.50. In the discussion which followed, several members took the ground that the liquor act should be amended so as to permit a maximum of one gallon to be dispensed on a veterinary prescription, and thought that an injustice had been done the druggist, who had no intention of violating the law. On motion of Dr. W. E. Martin, seconded by Dr. J. H. Lipsett, the Secretary was instructed to interview the Attorney-General upon the matter and try to have it righted.

The meeting then proceeded to the election of officers for the ensuing year. On motion of Dr. W. A. Dunbar, seconded by Dr. A. E. Williamson, the following gentlemen were appointed scrutineers: D. H. McFadden, W. S. Henderson and W. E. Martin.

A ballot was taken and the scrutineers reported the following elected to the Council: W. A. Dunbar, W. S. Henderson, J. McGillivray, W. E. Martin, J. S. Stevenson, F. Torrance, and A. E. Williamson.

The newly-elected Council then withdrew for a few minutes, and, on returning, the Secretary announced the election of the following officers:

President—J. S. Stevenson, Carman.

Vice-President—A. E. Williamson, Winnipeg.

Secretary-Treasurer and Registrar—F. Torrance, Winnipeg.

Examiners—W. E. Martin, F. Torrance and A. E. Williamson.

President Stevenson took the chair and in a few well-chosen words thanked the Association for the honor conferred upon him. He would endeavor at all times to further the interests of the Association.

The Hon. D. H. McFadden and Dr. A. E. Williamson were appointed Auditors for the ensuing year.

The President addressed the meeting on the subject of new certificates of membership. Several members had spoken to him, and there seemed to be a general desire for a certificate of better design and appearance than the one at present issued, which seemed to him the most insignificant document of the kind he had ever seen. The Secretary had made some inquiries as to the cost of new certificates and it appeared that they could be obtained at a reasonable figure. After some discussion by the members present, it was moved by Hon. D. H. McFadden, seconded by Dr. J. McGillivray, that the Secretary, Dr. Little and Dr. Martin be a committee to secure new certificates of membership in this Association, and issue them to all members entitled to them. (Carried.)

Dr. A. E. Williamson then reported a case of open joint of the elbow treated by antiseptics without improvement. The horse was finally destroyed. Dr. Torrance had seen the case in consultation with Dr. Williamson, and had asked the Doctor to report it for the meeting, as a discussion upon the treatment of this common injury should prove interesting to all. Unfortunately for veterinary surgery, it was impossible to put in practice those operations, such as excision, that are performed successfully upon human beings. Our patients must recover with perfect motion in the joint, otherwise there is stiffness or lameness and the result is unsatisfactory. Consequently wounds of joints in horses are often very serious, and if any method of treatment can be found that is more successful than those at present known, it would be a great benefit to the profession. The application of blisters to the part had been more largely recommended than any other treatment, and he would like to hear the experience of the members.

Dr. Dunbar thought that blisters were not very successful in healing the open joint, but were beneficial in removing lameness after the wound had been healed. The treatment he now used was antiseptic. He cited one case in which he treated an open joint with collodion and iodoform and the horse recovered in five days. In this case the wound never became infected. After suppuration has become well established with ulceration of the articular surfaces, there is no hope of recovery if an important joint is involved, and the animal should be destroyed. Another point he touched on was the use of slings. He found his patients did much better when not in slings, and he avoided them whenever possible.

Dr. Martin always applied a blister if he saw the case early,

found it closed the wound and relieved the pain. He first disinfected the part, and the blister he used contained corrosive sublimate. He remembered one case he treated for several days with antiseptics without improvement; the horse was in great pain and would not eat; he applied a blister, and next day the horse was eating and feeling much better. As for slings, if the horse can stand, he should be slung. Blisters should be used early, but not after much suppuration has begun.

Dr. McGillivray had successfully treated a case of open coffin joint with snow. The joint was open through a penetrating wound in the sole of the foot, and had been discharging synovia for five weeks. Snow was then applied continually for a week, and the discharge gradually ceased, and the horse made a good recovery.

Dr. Henderson had treated a case of open stifle joint with powdered boric acid and nothing else. The horse recovered.

Moved by Dr. C. Little, seconded by Dr. J. McGillivray, that the semi-annual meeting be held in Winnipeg during the month of July. Carried.

Moved by Dr. Little, that a vote of thanks be tendered the City Council for the use of the Committee Room.

In seconding the motion Hon. D. H. McFadden took occasion to say he was glad to be with us to-night. He was reminded of the first meeting of veterinarians he attended in Winnipeg some twenty-three years ago. Only four remained of those at that meeting. The late Dr. Lipsett, brother of Dr. Lipsett of Holland, was then a member of the Legislature, and through him the first Veterinary Act was obtained. The people of Manitoba must think well of the Veterinary Association, as the Legislature has never been without a representative of the profession since that time. He would always take pleasure in attending meetings of the Association. The motion was carried.

Moved by Dr. Williamson, seconded by Dr. Monteith, that a vote of thanks be tended the retiring officers. Carried.

Moved by Dr. Torrance, seconded by Dr. Little, that the prize offered by the Association for the best essay or case report be awarded to Dr. Williamson for his report on open joint. Carried.

Moved by Dr. Martin, seconded by Hon. D. H. McFadden, that a similar prize be offered for competition at the next annual meeting. Carried.

Moved by Dr. Little, seconded by Dr. Martin, that the proceedings be printed and distributed as usual. Carried.

The meeting then adjourned.

F. TORRANCE, *Sec.-Treas.*

VETERINARY MEDICAL ASSOCIATION OF NEW YORK COUNTY.

The regular monthly meeting was called to order by President Dr. J. E. Ryder. The roll-call was dispensed with. Members present: Drs. E. B. Ackerman, Roscoe R. Bell, C. E. Clayton, R. Dickson, R. W. Ellis, E. A. A. Grange, F. C. Grenside, Wilfred Lellmann, D. J. Mangan, R. A. Mackellar, A. O'Shea, A. E. Parry, J. F. Robertson, J. E. Ryder, T. G. Sherwood and C. Schroeder. Visitors: Dr. Wm. Hayes, Dr. R. E. Jones, Dr. R. J. Schreiber, New York City, and Dr. A. F. Mount, Jersey City. Also students of the New York-American Veterinary College, and others. The minutes of the previous meeting were adopted as read. None of the committees had any reports to make.

Dr. Lellmann presented specimens of sarcomatosis of the lungs in a horse, and of tuberculosis in the cat. He gave a microscopical demonstration of the specimens, in which he employed three microscopes. In one he showed a slide containing a cross section of the lung, showing the stained, small round cell sarcoma which he found in the horse; the other microscope showed a tubercular nodule undergoing necrosis in its centre, and the third exhibited the stained tubercle bacillus. The last two specimens were obtained from the cat. Dr. Lellmann found the case of sarcomata in a black gelding, 15.2, about 16 years old, and, according to owner, had been sick about two or three months. The animal was in an emaciated state; the visible mucous membranes appeared to be anæmic, pulse 60 to 70, respirations 40 to 50 per minute, and the temperature about 102° F. Auscultating the thorax he found on both sides of the lower regions of the lungs an entirely suspended or absence of respiration, while the upper regions showed a decided bronchial bruit and râles of different character; also a pleuritic friction sound was noticed. Percussion revealed a pronounced dullness on both sides of the lower thoracic walls. The dyspnœa appeared to be pronounced on expiration as well as on inspiration, but during the former (expiration) the lumbar region of the vertebral column would raise about two to three inches. There was very little cough to be noticed during the whole observation of the patient, which lasted for a week or two. Dr. Lellmann made a test puncture on both sides of the thorax between the sixth and seventh ribs, midway between the middle and lower thirds, but no fluid whatsoever could be drawn. On the strength

of this examination, everything but a neoplasm or a general cellular infiltration could be excluded. The condition of the horse being hopeless, he was destroyed, and a post-mortem held at once. The post-mortem revealed, macroscopically, the lungs to be almost in a complete state of inspiration. The color of the lungs were yellowish-white; the consistency almost hard. The surfaces showed a great many elevations of different sizes, some reaching that of a walnut. On cross section the tissue appeared to be of a medullary character, and on scraping the cut surface with the back of the knife, a whitish almost milk-like liquid was discharged. Between the whitish hardened tissue, there were very fine isles of pale pinkish color. The bronchial glands were very much enlarged, having the size of a man's fist. The mediastinal glands were somewhat larger. The costal pleura had a whitish and thickened appearance. The microscopical examination showed the characteristics of a small round cellular sarcomata, with scant fibrous tissue in some places, and a more ample deposit of fibrous tissue in other places, especially in the peri-bronchial tissue. Dr. Lellmann then described the differences between the structure of sarcomata, and that of carcinomata.

He followed this with a brief history of the case of tuberculosis in the cat, which was a male Angora, about three years old, which had developed, according to the owner's statement (who by the way is a surgeon), an abscess below the larynx. This abscess was opened by the owner, and he treated it for several weeks; but the wound showed very little inclination to heal, and, in the meanwhile, the animal rapidly became emaciated. On the owner's request to examine the cat, Dr. Lellmann found the wound in front of the trachea right below the larynx. This wound had the size of a dime and showed very flabby and exuberant granulations. With a probe he found a pocket which had formed, following the course of the trachea and extending to the sternum; another fistula ran from the wound to the cervical part of the vertebral column. Near the wound almost at the opening there was an enlarged gland the size of a hazel-nut; at the lower region of the neck near the entrance of the thorax a decidedly enlarged gland could also be detected. Auscultation of the lungs did not reveal anything abnormal. Considering the history of the case, and basing on the results of the examination, it was decided to chloroform the animal on account of the strong suspicion of tuberculosis. The post-mortem showed a pronounced miliary tuberculosis principally of the posterior lobe of the right lung. The bronchial and mediastinal glands were

somewhat enlarged. All the other visceral organs were apparently in a normal condition. Among the developed tubercles a number of fibrous tubercles could be seen. The posterior lobe of the right lung contained innumerable miliary tubercles of a yellowish-whitish and of a yellowish-grayish color. The microscopical examination showed a decidedly interesting picture of tubercular infection. Dr. Lellmann described the pathological and microscopical structure of a tubercle; the staining of the tubercle bacilli, and the method he employs in preserving specimens. The piece of lung containing the tubercles was examined by all who were present, and the sarcomatous lung of the horse came in for a great deal of attention. Considerable time was occupied in examining the microscopical specimens, which brought forth many questions from the members, which Dr. Lellmann kindly answered.

In answer to one question the Doctor said that he has met with a few cases of tuberculosis in cats, and thinks that the disease is common among them, but veterinarians do not find it very often due to the fact that they are seldom called upon to treat cats.

Dr. Ellis said that the officers and members should be congratulated upon having Dr. Lellmann give such a grand and interesting demonstration, which was very instructive; and he moved that the Doctor be extended a sincere vote of thanks for the same. His motion was seconded, and carried at once.

Dr. Lellmann thanked the gentlemen for their appreciation, and he promised to have other interesting specimens at future meetings of the Association.

Dr. Robertson stated that he did not have his paper on "Weaving" ready.

During the reports of cases, azoturia came under discussion. Dr. Mangan cited two cases in which the animals were taken down with the disease in their stalls; incidentally it was mentioned that the natrium bicarb. treatment was applied. One died on the third day and the other recovered. In the case that died there was an improvement noticed in the condition of the muscles affected; they becoming appreciably softer and flabby about thirty-six hours after the animal had been taken ill. The animal, a gray horse, was in a very bad condition when seen; the hip and shoulder muscles were hardened and swollen to a great extent; the urine extremely viscid, and blackish-brown in color. The penis was in a very severe state of spasm and resisted, for nearly an hour, all attempts to withdraw it from the sheath.

Drs. Clayton, Ackerman, Schreiber, Ellis and Lellmann discussed the efficacy of natrium bicarb. in the treatment of azoturia. Drs. Schreiber and Ellis stated that they obtained very favorable results from it.

Dr. Lellmann described the effects and actions of natrium bicarb. in azoturia.

Dr. Parry asked if some one could recommend a treatment for atrophy of the muscles following azoturia. Dr. Lellmann suggested the use of one grain of veratrin puri in one and a half drachms of a seventy per cent. alcohol solution, this to be injected into the affected muscles, repeating the injection in two or three days. Make in all five or six injections.

Dr. Parry moved that John Brooks, the janitor, receive a donation of five dollars from the Association, for the benefit of the "Colored Widows and Orphans Home." The motion was regularly seconded and carried.

Dr. Ellis had no paper ready, but gave some valuable advice regarding the care of the horse's teeth, in which he said that veterinarians too often paid little attention to their care, allowing those in charge of the horse to call their attention to the condition of the horse's mouth. This apparent indifference, Dr. Ellis thought, on the part of qualified veterinarians, made the way easy for self-styled veterinary dentists to come to the front and humbug the horse-owner. He then spoke of the normal mouth, and of the immense development of the premolars in the horse, compared with those of other animals. Regarding the so-called "wolf teeth," the Doctor considered them nothing less than vestigial premolars; four premolars having been found in the pre-historic horse. Dr. Ellis said that in adjourning to the clinic room, he was not going to attempt to show any new operations on the teeth, but simply show another way of doing an old one. The members and visitors then proceeded to the clinic ward of the college, where Dr. Ellis showed them the use of the "Twentieth Century Dental Float" and the "Veterinary Dental and Surgical Halter." The "halter" held the horse's head in a most convenient position for operation upon the teeth; it being possible with this appliance to raise or lower the horse's head to a position convenient to the operator. The animal could not turn its head to either side, nor did the "halter" interfere with the manipulation of the mouth or operation. With the horse thus held, Dr. Ellis proceeded to float his teeth with the power float; it was but the work of a few moments to perfectly smooth off the projecting edges, despite the fact that the molars

were very hard, long and in a state of neglect. Dr. Ellis stated that the little roller cutters made about two thousand revolutions per minute. A number of the members present examined the horse's mouth before and after the operation, and remarked how smooth the float left the teeth; they evidently were greatly pleased with its simplicity and practicability.

The meeting was then adjourned.

D. J. MANGAN, *Secretary*.

MISSOURI VALLEY VETERINARY ASSOCIATION.

The 39th regular meeting of this Association was held in Kansas City, at the Kansas City Veterinary College, corner of Fifteenth Street and Lydia Ave., on Monday, Feb. 15th, 1904, with the largest attendance in the history of the Association. The meeting was called to order at 9.30 A. M. by President Dr. F. F. Brown. About 75 veterinarians and over 200 students were present. The following is a partial list of the veterinarians present: *Missouri*.—Drs. D. F. Luckey, Columbia; O. J. Phillips, Holden; E. V. Robnett, Higginsville; F. M. Starr, F. E. Bishop, Odessa; C. E. Steele, E. J. Netherton, C. N. McFarland, A. N. Reber, X. I. Richmond, J. E. Blackwell, St Joseph; C. E. Chenoweth, Albany; L. D. Brown, Hamilton; W. Warren, Windsor; R. H. Carswell, A. Trickett, A. Byrd, F. H. Davis, W. H. Gatchell, F. T. Allen, G. W. Werner, Geo. W. Merker, Geo. B. Nicholas, L. D. Palmer, R. C. Moore, F. F. Brown, S. Stewart, S. E. Bennett, O. A. Stingley, J. F. Tippet, M. A. Sappington, W. F. Lavery, J. D. Cooper, W. R. Cooper, B. F. Kaupp, A. L. Hunt, E. M. Nighbert, F. I. Wynant, H. C. Babcock, F. L. Kampschmidt, E. E. Hubbard, Kansas City. *Kansas*.—Drs. John Nott, Clay Center; D. O. Knisley, Topeka; N. S. Mayo, Manhattan; C. B. McClelland, Lawrence; W. T. King, Olathe; W. L. Elliott, Paola; W. N. Hobbs, Holton; A. Plummer, R. H. Powers, Ft. Riley; S. L. Hunter, O. M. Norton, Ft. Leavenworth; Chas. Saunders, Eldorado; C. M. Crandall, Seneca; E. C. Lahr, Sabetha; T. W. Hadley, F. W. Weston, H. M. McFarland, M. C. Lint, J. S. Groves, E. N. Stout, Kansas City. *Nebraska*.—Drs. H. L. Ramacciotti, Omaha; J. D. Sprague, David City; J. S. Anderson, Seward; A. Bostrom, Minden; H. Jensen, Weeping Water; W. A. Thomas, Lincoln; V. Shaeffer, Tekamah; H. E. Foster, Falls City. *Iowa*.—Drs. J. H. McNeill, Ames; D. H. Miller, Harlan; Killip, Mt Pleasant. *Oklahoma*.—Dr. G. J. Roach, Manchester. *New York*.—Dr. W. J. Guil-

foil, Auburn. *Minnesota*.—Dr. E. F. Frank, Warren. *Montana*.—Dr. J. G. Veldhuis, Big Timber. *Michigan*.—Dr. Z. Veldhuis, Fremont.

The meeting proceeded to the regular order of business. After roll-call and reading of minutes of previous meeting, 26 names were presented for membership after having been reported favorable by the Board of Censors. Upon motion, which was seconded and carried, the Secretary cast the vote of the Association for the following to become members of the Association: *Missouri*.—Drs. Atvill Byrd, D. F. Luckey, F. M. Starr, O. J. Phillips, Geo. W. Merker, J. W. Connoway, V. J. Andre, Geo. B. Nicholas, J. D. Cooper, J. F. Tippet, E. V. Robinett. *Kansas*.—Drs. W. L. Elliott, F. W. Weston, O. M. Norton, John Nott, D. O. Knisley, N. S. Mayo, R. H. Power, A. Plummer. *Nebraska*.—Drs. J. S. Anderson, H. Jensen, H. L. Ramacciotti, A. Bostrom, W. A. Thomas. *Iowa*.—Dr. J. H. McNeall. *Oklahoma*.—Dr. G. J. Roach.

Amendments were introduced to change the Constitution and By-Laws as follows:—To authorize semi-annual meetings January and July. Requirements for membership shall conform to those adopted by the American Veterinary Medical Association. A resolution was adopted creating a committee on legislation with instructions to coöperate with committees on legislation from State Associations endeavoring to secure needed veterinary legislation in the States bordering on the Missouri River. The President appointed the following on this committee: Dr. A. Plummer, Fort Riley, Kans.; Dr. H. Jensen, Weeping Water, Neb., and Dr. L. D. Brown, Hamilton, Mo.

Upon motion, which was seconded and carried, \$20 was voted to the Nocard Monument Fund.

The following papers were then presented: Dr. N. S. Mayo, of the Experiment Station of Kansas, under the subject of "Scabies in Cattle and Treatment," gave a graphic account of scabies as he found it in that State. The following are some interesting points brought out in the presentation of the paper and discussion: Attention was called to the fact that the only disease that may be mistaken for scabies is lousiness, but in scabies the scabs pile up, forming thick crusts fully $\frac{1}{2}$ inch thick, where they are not rubbed off, a condition not found in lousiness. In field work it was his method to scrape off scabs close to skin, place in bottle, and left in sunshine or warm place, the mites will soon leave scabs and on close examination can be seen crawling over wall of bottle, appearing as small white

specks. As to dips, practically all dips had been used, with the best success with the lime and sulphur dip, in proportions of 8 pounds lime, 21 pounds sulphur, and 100 gallons of water. Lime should be slacked to paste, then mixed with sulphur as it is boiling. If sulphur is not sufficiently dissolved by boiling, the lime may have caustic effect. Dr. W. A. Thomas, State Veterinarian of Nebraska, stated the best results were obtained when dip was boiled at least one hour. If hard water is used sal-soda or other similar substances must be used to cut the water. In using coal tar dips, when dip was not thoroughly mixed, weak animals are sometimes noted to go down, froth at the mouth, and die. Dip used at a temperature of 108 to 116° F., cattle left in two minutes, completely submerged twice. Two dippings are necessary, about two weeks apart. Various vats were used, the swim vat proving most satisfactory for large herds. In vat with the swinging table, cattle were liable to hurt themselves. For small bunches the cage dipping arrangement was very satisfactory. The cage vat can be built for about \$100, the swim vat costing much more. The cage vat was so arranged as to operate by horses. The dip in vat has been kept warm by steam from traction engine. Dr. McNeall, of Experiment Station of Iowa, asked method of disinfecting posts, fences, etc. Dr. Mayo stated that the sediment from the dip had been used satisfactorily. Dr. Thomas asked effect upon lice. Dr. Mayo said it was the best method of eradicating the parasite from a bunch of cattle.

Dr. L. D. Brown, Assistant State Veterinarian of Missouri, presented the subject of "Parasite Invasion in Cattle Producing Scours," and the serious loss to many herds. It developed in the discussion that followed that this malady was prevalent throughout a considerable part of the State of Missouri and surrounding States, the cause being due to members of the family strongylidæ.

Dr. W. A. Thomas presented some phases of the problem of the control of tuberculosis, particularly in dairy herds. His remarks led to a general discussion of means by which this is to be accomplished, and to the necessity of honesty and intelligent effort on the part of veterinarians everywhere in this great work.

Dr. H. Jensen, of Weeping Water, Neb., presented an interesting paper upon the subject of "Pharmaceutical and Therapeutic Preparations of Interest to Veterinarians,"* giving sug-

* Will be published in any early number of the REVIEW.

gestions as to methods of preparing several drugs and compounds of especial use. The paper brought out a good discussion, and, in accordance with a vote of the Association, the Secretary has sent a copy of the paper to the REVIEW for publication.

At 12.00 M. the meeting adjourned to luncheon, which was served in the College Auditorium under the direction of the committee on local arrangements.

At 1.00 P. M. a clinic was held in the clinical amphitheatre of the Kansas City Veterinary College, which has a seating capacity of 300. The amphitheatre was well filled by veterinarians and students. The first animal confined on the operating table was for the operation of arytenoideraphy, by Dr. J. S. Anderson, of Seward, Neb. Upon making an opening into the larynx, an abscess was observed in the right ventricle, and behind the vocal cord. The right vocal cord and one branch of the thyro-arytenoides muscle was removed, the cord being paralyzed, and to give drainage to small abscess in that locality. Dr. V. Schaeffer, of Tekamah, Neb., performed median neurectomy. Dr. R. C. Moore, of the Kansas City Veterinary College, removal of lateral cartilage for cartilaginous quittor. Dr. J. H. McNeall, of Ames, Iowa, tenotomy for relief from contraction of perforans tendon, also Bossi's double tarsal neurectomy. Many interesting cases for diagnosis were presented. The clinic was of unusual interest and lasted till 6 o'clock.

At 7.30 P. M. the evening session was called to order, when the following papers were presented: Dr. S. E. Bennett, chief of the local branch of the U. S. Bureau of Animal Industry, gave a graphic account of the stamping out of contagious foot-and-mouth disease in the New England States, he having had charge of the work during the progress of the plague. Many incidents showing the difficulty of administration and the persistence of some stock-owners in their efforts to evade sanitary regulations were cited. The following are some of the interesting points brought out in the paper and discussion that followed: A cow after five months from time of apparent recovery may spread the disease; abscess formation in udder is a frequent occurrence; the method of spread of disease is not always easy to determine; one outbreak was traced to dogs carrying the infection, another to pigeons picking up feed from infected barn-yard, while still another was supposed to have been carried by rats; the period of incubation is from five to eight days; most prominent symptoms are smacking of jaws, dribbling of

ropy saliva from mouth, vesicles on udder, and between toes; cases sometimes found where there are foot lesions but no mouth lesions; animals lie down or change from one foot to another on account of conditions in feet.

Dr. O. A. Stingley, Inspector Bureau of Animal Industry, Kansas City, presented a carefully prepared paper on the subject of "Rabies," which was interesting and brought out a good discussion.

Dr. C. B. McClelland, of Lawrence, Kansas, reported the peculiar influence of the waters of the Kansas River flood upon live stock, which were, for a time, partly submerged. It seems from his report and that of others that the flood waters affected the skin of animals very much like a weak solution of concentrated lye, burning the surfaces exposed, swellings appearing, followed by sloughing.

At a late hour the meeting adjourned.

B. F. KAUPP, D. V. S.,
Secretary.

MINNESOTA STATE VETERINARY MEDICAL ASSOCIATION.

The seventh annual meeting of this Association was held at the Merchants' Hotel, St. Paul, Minnesota, January 13th and 14th, 1904, and was called to order at two P. M. by Dr. K. J. McKenzie, President.

Roll-call showed the following members present: Drs. C. C. Lyford, R. Price, B. Lambrechts, J. G. Annand, G. McGillivray, M. J. Sexton, J. W. Cook, O. Rydell, G. Ed. Leech, M. H. Reynolds, L. Hay, S. H. Ward, W. Amos, H. C. Lyons, A. F. Lees, J. McKay, N. A. Christianson, E. L. Kalb, S. D. Brimhall, K. J. McKenzie, G. A. Dallimore, J. N. Gould, H. C. Peters, J. P. Foster, D. M. McDonald, C. A. Mack, and R. Kjerner. Drs. Youngberg and Eckles came later.

The minutes of the last semi-annual meeting were read by Dr. Ward, Secretary *pro tem.*, and approved.

Report of Treasurer was next given and then handed to the Committee on Finance, which reported favorably and was accepted by the Association.

The applications for membership of the following were favorably acted upon and duly elected to membership: Drs. Osman W. Stanley, Sauk Centre; C. C. Lipp, St. Anthony Park; J. P. Graff, New Ulm; F. G. Ketchum, So. St. Paul; A. Spence,

Hallock ; J. M. Douglas, Hendrum ; J. H. Newman, St. Cloud ; W. H. Whitcomb, Plainview ; and R. C. Nickerson, Zumbrota.

Next in order was the report of committees. Dr. Lyford gave his report on colleges, as follows :

"It is interesting to notice in the January number of the AMERICAN VETERINARY REVIEW a letter from Dr. A. Liautard reporting some very marked improvements in length of course and advanced standard of many of the English and Continental schools. An article in favor of two-year colleges is also to be found in the same number of this journal on one of its last pages. It speaks volumes for the two-year system of schools.

"Since my last report on colleges at our summer meeting, no change for the betterment of courses has been reported from any of the colleges which conduct a two-year system, notwithstanding that a decided effort was made by the graduates of the Ontario College, at the last meeting of the A. V. M. A., in favor of making this school a three-year college. Had the graduates of this college a voice in the matter, it would long ago have been on the list of three-year schools.

"The Kansas City Veterinary College, one of our progressive three-year schools, has lately moved into a new building, constructed for the sole purpose and convenience of this institution. Judging from the size of the structure, one might suspect it would be some time before its capacity might be reached, but as this college is reported to have nearly two hundred students the prospect is good for its being filled to its limit in the near future.

"We are now confronted with a new departure in the way of correspondence schools. These schools, according to report, are located at Sioux City, Iowa, and at London, Ontario. Students claiming to have diplomas from these institutions have already asked if they may be allowed to present their diplomas and receive a State certificate. It is hardly necessary to state that our examining board has no intentions of recognizing this class of institutions.

"A new quarterly review has been added to our list of journals by the Kansas City College, which should prove beneficial to both students and graduates of that institution.

"The *Journal of Comparative Medicine and Veterinary Architecture* seems to have forgotten its subscribers, as it is long since overdue—May, 1903, I believe, was its last effort."

Dr. Brimhall reported on infectious diseases in the State from July 1st to Dec. 31st, 1903, as follows :

"*Black-leg*.—There have been 52 deaths during the past six months reported from this disease.

"*Cerebro-Spinal Meningitis*.—The disease has been reported to exist in the following counties: St. Louis, Rock, and Faribault, but there has been no serious outbreak.

"*Hæmorrhagic Septicæmia*.—There have been 48 deaths reported from this disease, which has been scattered over about 15 counties.

"*Rabies*.—The disease has been reported in the following counties: Rice, Hennepin, Mower, Blue Earth, Anoka, McLeod, Faribault, and Washington. Deaths have been as follows: 36 dogs, 16 cattle, 3 horses.

"*Actinomycosis*.—Veterinarians throughout the State have reported more or less of this disease.

"*Scabies*.—We have had reports from the Federal authorities of 3337 sheep affected with this disease. Nearly every farm from which the diseased sheep were shipped has been visited, and instructions, etc., given.

"*Swamp Fever*.—The disease has been reported by veterinarians as existing in ten counties, one or more animals dying from the disease. The counties in which the disease existed are as follows: St. Louis, Washington, Kittson, Becker, Polk, Stearns, Marshall, Norman, Meeker, and Clay.

"*Tuberculosis*.—There have been 3712 cattle tested, and of these 472 have reacted to the test and have been killed, the State paying three-fourths of appraised value.

"*Glanders*.—Number inspected, 2370; killed on inspection, 144; tested on inspection, 186; reacted when tested, 71; killed after test, 50; quarantined for retest, 43; reinspected, 79; killed on reinspection, 4; retested and released, 11. Total killed, 198.

"*Hog Cholera*.—The disease has been reported in 26 townships scattered through 16 counties. With the exception of Lac qui Parle and Yellow Medicine counties, the disease has been confined mostly to one farm."

Committees on Bacteriology, Surgery and Medicine had no reports to give.

Dr. Ward, Chairman of Committee on Legislation and Empirics, gave a concise report of the difficulties encountered by the State Veterinary Examining Board in dealing with recent applicants for State license to practice veterinary medicine, surgery and dentistry.

Under new business Dr. Reynolds called for the resolution

that was laid on the table at the July meeting. After the reading of the resolution, Dr. Ward made a motion, seconded by Dr. Dallimore, that the resolution be thrown out. Considerable discussion ensued before the President put the motion. After quite a heated discussion, Dr. Leech offered an amendment, seconded by Dr. Cook, that the resolution be obliterated from the minutes of the Association. The amendment was carried.

The Association adjourned for supper.

At the opening of the evening session came the election of officers. Dr. Hay, of Faribault, was the unanimous choice for President. So was Dr. McGillivray, of Spring Valley, for First Vice-President, and Dr. Price, of St. Paul, for Second Vice-President. Dr. Annand, was elected Secretary and Treasurer.

Moved by Dr. Lyford, seconded by Dr. Leech, that Dr. J. N. Gould, Dr. Brimhall and Dr. Peters be retained as Trustees for the ensuing year.

After election of officers, Dr. Price led a discussion on azoturia. Upon experimenting on the smaller animals the Doctor claims that he can produce the same conditions as found in azoturia by injecting hypodermically glycolic acid, but had not carried the experiment far enough to state that azoturia was due to this acid.

Dr. J. N. Gould read a well prepared paper on "The Gubernaculum Testes in Cryptorchids."

Dr. Lyford presented a paper on "Cystic Tumors."* This paper was very interesting from a surgical standpoint.

Meeting adjourned to meet the following forenoon, January 14, 1904.

Meeting called to order by President Hay, at 10 A. M.

Dr. McGillivray reported an interesting case of tetanus in one of his driving horses. The discussion that followed brought out one thing and that was that tetanus antitoxin was considered reliable as prophylactic treatment, but of little or no value as a curative agent.

Dr. Youngberg presented a paper on "Practical Antiseptics in Operative Surgery,"* which was a very good one. He disapproved the use of all the coal tar products, as nearly every barn-man and horse-owner was familiar with those preparations, which consequently reflected discredit upon the practitioner. Dr. Cook thought it was very poor policy for veterinarians to endorse these common antiseptics and permitting their names

* Will be published in an early number of the REVIEW.

to be published in the manufacturers' circulars with quacks and stockmen.

Dr. Christianson read a paper in the form of a report upon the subject of "Abscess of the Anterior Mediastinum." * This was an interesting case, as it is of infrequent occurrence.

It was moved and seconded that the Secretary have a directory printed with the names of all the licensed veterinary practitioners in the State, one copy to be mailed to each member of our Association. There are to be 500 copies issued. Copies of the directory are to be furnished to anyone who is not a member of our Association and to members of our Association requesting extra copies, for the sum of one dollar for each copy.

Moved by Dr. Lees, seconded by Dr. Leech, that a vote of thanks be extended to the out-going officers for their excellent service.

President Hay appointed the following committees for the year :

Colleges, Dr. M. H. Reynolds; *Infectious Diseases*, Dr. S. D. Brimhall; *Bacteriology*, Dr. R. Price; *Surgery*, Dr. J. P. Foster; *Medicine*, Dr. J. W. Cook; *Legislation and Empirics*, Drs. S. H. Ward (Chairman), C. C. Lyford and A. Youngberg; *Finance*, Dr. G. Ed. Leech; *Press*, Drs. J. G. Annand (Chairman), K. J. McKenzie and D. McDonald; *Resolutions*, Drs. A. F. Lees (Chairman), O. W. Stanley and G. Ed. Leech.

It was moved by Dr. Leech and seconded by Dr. Cook that the President appoint two other members of the Association to act with Dr. Reynolds on the Committee on Colleges. This committee is to investigate and report on the moral and educational standing of the different colleges whose graduates can be recognized and admitted to our Association as members. Dr. Lyford and Dr. Foster were added to the committee on colleges. Dr. Lyford wishing to withdraw from the committee, as he has served on that committee so long, Dr. Ward was appointed in his stead.

Meeting adjourned for dinner.

At 2 P. M. the Association assembled at Dr. Pomeroy's infirmary for the clinic. There were no operations performed. A number of cases of lameness were on hand.

J. G. ANNAND,
Secretary.

* Published elsewhere in this number.

THE ILLINOIS STATE VETERINARY MEDICAL ASSOCIATION.

The twenty-second semi-annual meeting of this Association was held in Peoria, Illinois, at Hotel Fey, February 23, 1904.

The meeting was called to order by the President, Dr. A. H. Baker, at 10 A. M. The minutes of the previous meeting were read and approved. The following members were present: Drs. John Scott, Peoria; A. H. Baker, Chicago; R. F. Hoadley, Yorkville; J. S. Hollingsworth, La Salle; T. P. Brankin, Joliet; R. C. Mylne, Aurora; C. C. Mills, Decatur; M. C. Eckley, Galesburg; N. W. Kyle, Colfax; Jas. Smellie, Eureka; H. A. Pressler, Fairbury; N. I. Stringer, Watseka; J. T. Nattress, Delavan; W. J. Martin, Kankakee; E. J. List, Havana; F. H. Ames, Canton; C. S. Hayward, Mattoon; C. D. Hartman, Peoria; W. H. Robinson, Peoria; W. H. Welch, Lexington; H. B. Cale, Macomb.

Dr. M. C. Eckley, of Galesburg, made application for membership, and was duly elected.

It was moved and seconded that the President, Vice-President, Secretary and two members, to be appointed by the Chair, be constituted a committee to memorialize the numerous candidates for the office of Governor to appoint to the office of State Veterinarian (in the event of their election) a graduate of a recognized veterinary college. Also to obtain from them an expression as to whether they would or would not do so in the event of their election. Carried.

The Secretary was ordered to acquaint the members with the replies of the various candidates, and all the members present pledged themselves to support that candidate in the coming fall election who replied favorably to our request, regardless of politics.

It was moved and carried that the President be appointed to officially represent our State Association at the meeting of the American Veterinary Medical Association at St. Louis next September. Moved and carried that the Secretary be empowered to purchase suitable badges bearing the word "Illinois" for the use of our members.

The following bills were allowed: Printing and stationery, \$16; Secretary's fees, \$10; stamps, \$5; total \$31.

A motion was made and carried to accept the invitation of Messrs. Sutliff & Case to visit their drug house.

Society adjourned to meet at 2 P. M.

The following interesting and instructive papers were read

by the following members, and were all quite extensively discussed: Dr. T. P. Brankin, "Influenza"; Dr. R. C. Mylne, "Simple Home Remedies in the Hands of Farmers"; Dr. C. S. Hayward, "Metritis in the Mare"; Dr. Jas. Smellie, "External Ulcerative Ano-Vulvitis of Cattle"; Dr. A. H. Baker, "A Freak of Nature in a Jersey Cow"; Dr. H. B. Cale, "Pneumonia"; Dr. J. S. Hollingsworth, reports of cases.

Society adjourned to meet in Chicago, December, 1904.

W. H. WELCH, *Secretary*.

SCHUYLKILL VALLEY VETERINARY ASSOCIATION.

The semi-annual meeting of this Association was held at the Board of Trade Room, Reading Pa., on Dec. 17th, 1903. The meeting was called to order by the Vice-President, Dr. G. A. Wehr, Denver, owing to the absence of the President, Dr. F. H. McCarthy, Pottsville.

The following members answered to their names: Drs. D. R. Kohler, Boyertown; G. A. Wehr, Denver; Otto G. Noack, Reading; F. H. Schneider, Philadelphia; W. S. Longacre, Mantz; U. S. G. Bieber, Kutztown; A. R. Potteiger, Selinsgrove, and W. G. Huyett, Wernersville.

As there were matters of much interest to be discussed in the course of the day, the usual business routine was called for at once. The minutes of the previous meeting were read and confirmed. The Secretary's and Treasurer's reports were read and approved, showing the finances to be in a favorable condition.

A number of communications were then read, among the most important being those from Dr. E. M. Ranck, President Pennsylvania State Veterinary Medical Association, Natchez, Miss., regretting his inability to be present, and inviting this Association to be ably represented at the State meeting in Philadelphia in March, and from Dr. John R. Mohler, Department of Agriculture, Washington, D. C., relative to the proposed monument to the late Prof. Nocard.

The Vice-President not being prepared to offer a President's address, instead related his experience with an interesting case of a mare, having been pregnant twenty-seven (27) months, died and upon post-mortem found the foetus to be mummified. Similar cases were henceforth related by Drs. Potteiger, Noack and Longacre.

In consequence of the communication from Dr. Jno. R. Mohler, Department of Agriculture, Washington, D. C., a mo-

tion was made and seconded that the sum of ten dollars be sent to Dr. Mohler as a contribution toward this fund.

At the instance of Dr. Wehr, Denver, reporting before the society of one Jno. Prison, Ephrata, Pa., who declares himself a veterinary surgeon, the Secretary was instructed to inform the Secretary of the State Board of Examiners of this illegal practitioner.

Dr. F. H. Schneider gave an excellent report of the Keystone Veterinary Association.

The meeting adjourned for luncheon.

The President opened the meeting after lunch, when Dr. Noack, as delegate to the recent convention of the American Veterinary Medical Association, responded in an eloquent manner, giving a synopsis of the work accomplished and further declaring it the best National meeting he ever attended, which goes to admit that the Association is making great strides of advancement.

Dr. W. S. Longacre read a particularly interesting paper on "Fractures: Diagnosis, Causes, Symptoms and Treatment." It elicited many instructive points and general remarks from many of the members.

Dr. D. R. Kohler read a paper entitled "Laminitis." It was of appreciative interest and replete with information. The discussion which ensued was principally on the treatment, each member relating his success with a seemingly different treatment.

The Secretary reported upon a number of cases.

The Association was highly gratified to have had as their guest, Dr. Leonard Pearson, State Veterinarian, who very seldom absents himself from our Reading meetings.

Motion was made and carried to adjourn. Next meeting at Pottsville, June 15th, 1904. W. G. HUYETT, *Secretary*.

NEWS AND ITEMS.

DR. F. M. NIGHBERT, B. of A. I., Kansas City, has been transferred to the South East Quarantine force.

THE KANSAS CITY VETERINARY COLLEGE gave a banquet at the Coates House to its 200 students on March 8th.

WM. H. GRIBBLE, D. V. S., the faithful and efficient Secretary of the Ohio State Veterinary Medical Association, Washington C. H., Ohio, is suffering from a recent inguinal hernia, which made its appearance without any assignable cause.

"THE results obtained from the advertisement placed in the AMERICAN VETERINARY REVIEW by this college are really astonishing. . . . Please renew the 'ad' when it expires."—(*San Francisco Veterinary College.*)

THE HEALTH OF PRESIDENT ROOSEVELT'S HORSES.—President Roosevelt has consideration for the health and welfare of his horses. One of his latest requests, transmitted to Congress through Secretary Shaw, is for \$90,000 for a new White House stable. The one now in use, he says, is so damp that the health of his horses is suffering. They are threatened with influenza, according to the President, and he wants a new home built for them on higher ground before they catch disease and are permanently affected.

DRS. CHAS. H. PERRY, of Lakewood, N. J., and Augustus Berdan, of Paterson, N. J., have successfully passed the examination of the New Jersey State Board of Veterinary Medical Examiners, and have been duly licensed to practice in the State of New Jersey. Dr. Perry had been in practice for fifteen years, having graduated from the New York College of Veterinary Surgeons in 1889, but his registration did not appear on record in the County Clerk's office, where he supposed he was registered under the old law, hence the necessity of his taking the State Board examination for license under the new law. Dr. Berdan graduated from the New York-American Veterinary College in 1903, and has served as House Surgeon at that institution since his graduation.

HOW MILK INSPECTION SHOULD BE DONE.—The License Inspector of Vancouver thinks milk inspection belongs to the public health department, and that a specially qualified man should look after it. Quite right! The city should have a qualified up-to-date veterinarian make monthly inspections of every dairy and herd supplying milk for consumption. A bacteriological examination should be made of the milk vended, samples being taken from the rigs on the street, and on the result of the two officials' work should depend whether a license to sell milk should be granted or not. To babes and invalids, milk of the purest quality is essential. It is criminal negligence for a city to permit inferior milk to be vended, no matter who the vendor may be. It should not be necessary to doctor up a staple article of diet with preservatives in order to sell it.—(*Farmer's Advocate, Winnipeg, Manitoba.*)

ANSWERS TO CORRESPONDENTS.—*Dr. N. F. E., Ohio.*—The REVIEW cannot undertake to give you all the details of the

oxygen treatment for parturient paresis of cows. They have been published from time to time, and anything new developing in relation to it you will find in these pages. Dr. Ridge, of Trevoise, Pa., read a very comprehensive paper on the subject before the Pennsylvania State Association on March 9. We hope to publish his paper in full as soon as received. He dealt with the most minute details of the procedure. See letter of Dr. F. R. Whipple in this issue under head of "Correspondence," which gives the details employed by him. Your second request for the etiology, pathology and therapeutics of azoturia must receive the same answer, though we regret to say that nothing as positive can be pointed to as with the disease of cattle. As you must know, if you have followed the literature of the profession in regard to azoturia, no acceptable theory as to the etiology has been promulgated, and the pathology of the affection is poorly understood. Its therapy includes the contents of the Pharmacopœia, though the belief that too much medication has been indulged in is gaining in adherents. . . . *Dr. M. P. D., Pennsylvania.*—Write Dr. Wm. Henry Kelly, Secretary of the New York State Veterinary Medical Society, 233 Western Ave., Albany, N. Y., who is also Chairman of the Prosecuting Committee of that Society. . . . *Dr. F. W. Culver, Longmont, Colorado.*—The article on "Congenital Tuberculosis" was by Dr. H. B. Freeman, and was published in the April, 1903, REVIEW, page 68. . . . *Otis A. Longley, D. V. S., Fresno, Cal.*—We do not know the name of the manufacturer of the revolving operating table referred to in your letter.

THE VETERINARY STANDARD IN CANADA TO BE RAISED!
—The agitation in the columns of the *Farmer's Advocate*, editorially and otherwise, for a higher standard of veterinary education in Canada, has borne fruit. The Agricultural Committee of Toronto University drafted recently a curriculum for the approval of the University Senate, which provides for a three years' course leading to a diploma in veterinary science (V. S.) The holder of the V. S. diploma may after the expiration of one year be admitted to the degree of Doctor of Veterinary Science (D. V. S.) on presenting an approved thesis on the result of special research in a scientific laboratory. A significant fact is that all examinations will be conducted by examiners appointed and under the regulations approved by the Senate of the University. At a later date we shall take up the proposed course and discuss the details. It is now in order for the Veterinary Associations

of Ontario and the Northwest Territories to perfect their organization and have legislation enacted similar to that in force in Manitoba, which insists on the licentiate to practice being a graduate from a three-year school. Such legislation in Manitoba has resulted in a better average veterinary service being available to the Canadian stockman and farmer than elsewhere in the Dominion.—(*Farmer's Advocate, Winnipeg, Man.*)

CLAIMS COW'S MILK TO BE THE GREATEST SOURCE OF TUBERCULOSIS IN MAN.—Justine Ingersoll, of New York, has the following letter in the New York *Herald* of March 9: "It has just come to my notice that you have done me the honor, in a recent edition of the *Herald*, to allude to my statement that cow's milk is the cause, and not the transmitter, of tuberculosis and all mucous diseases to both human beings and animals. Will you permit me to suggest that your correspondent has omitted the salient point in my denunciation of cow's milk as a food, which, in a few words, is this: After a thorough and exhaustive research I know that in such countries whose people do not drink cow's milk tuberculosis is unknown. I can cite authoritatively the following regions: Lapland, and the countries of the extreme north, where the milk of the reindeer is drunk by the natives; India and China, where the water buffalo affords the milk supply; the provinces of the Philippines where there are no cows and in spite of the prevailing dampness no consumption. And yet in Manila, where the climatic conditions are the same; but where civilization has introduced its crowning curse—the cow—tubercular diseases carry off more victims than either smallpox or fever. Australia was free from the consumption which now rages there up to the time of the importation of the cow, and the same incontrovertible truth holds good in regard to Japan, where consumption has become a scourge since Europeans have introduced the custom of drinking cow's milk. All great truths, by reason of their simplicity, are slow to be accepted and hard to establish. I most humbly submit these facts to all thinking people."

WEEDS USED IN MEDICINE.—The U. S. Department of Agriculture has just issued Farmers' Bulletin No. 188, entitled "Weeds Used in Medicine." The bulletin was prepared by Alice Henkel, Assistant in Drug and Medicinal Plant Investigations, Botanical Investigations and Experiments, Bureau of Plant Industry. Attention is called to the fact that certain well-known weeds now either generally or locally infesting the country are the sources of crude drugs at the present time obtained

wholly or in part by importation from abroad. Roots, leaves, and flowers of several of the species most detrimental in the United States are gathered, prepared, and cured in Europe and not only form useful commodities there, but supply to a considerable extent the demands of foreign lands. Hence it appears probable that while weeds can hardly be made desirable, still in his fight to exterminate them the farmer may be able to turn some of them to account. Some of the plants coming within this class are in many States at present subject to antiweed laws, and farmers are required to take measures toward their extermination. It seems, therefore, desirable to make these pests sources of profit where possible. The prices paid for crude drugs from these sources are not great and would rarely tempt anyone to pursue this line of work as a business. Yet, if in ridding the farm of weeds, and thus raising the value of the land, the farmer can at the same time make these pests the source of a small income instead of a dead loss, something is gained. In order to help the farmers to obtain the best possible results for such products, instructions for collecting and preparing crude drugs from weeds are briefly given. The plants mentioned in the bulletin are burdock, dandelion, the docks, couch grass, and pokeweed (principally root drugs); foxglove, mullein, lobelia, tansy, gum plant, scaly grindelia, boneset, catnip, hoarhound, yarrow, fleabane, blessed thistle, jimson weed, and poison hemlock (of which either the leaves, flowers, herb, or seeds are used in medicine); and also wormseed, and black and white mustards, of which only the seeds are used. Descriptions of these plants are given, together with the common names by which they are known in different localities, the habitat (or, in other words, the kinds of places or soils in which they are likely to be found), their geographical range, information as to the parts to be collected, their uses, the extent to which they are imported, and the prices usually paid by dealers. The principal uses for which these plants are employed in medicine are briefly indicated, but notice is given that none of the drugs mentioned should be taken without the advice of a physician. Suggestions are also given relative to the manner of disposing of the crude drugs and of packing and shipping them. The bulletin contains 31 illustrations of the weeds described. It is for free distribution and can be obtained on application to Senators, Representatives, and Delegates in Congress, or to the Secretary of Agriculture, Washington, D. C.

AMERICAN VETERINARY REVIEW.

MAY, 1904.

EDITORIAL.

EUROPEAN CHRONICLES.

PARIS, March 20, 1904.

RADIUM! RADIUM!! Everything lately has been on that subject. Daily papers are full of it, scientific societies are occupied with it, the Academy of Medicine has its attention called to it; even veterinary papers treat of it; it is in the *Receuil de Medecine Veterinaire* that Kauffmann writes a long article on its properties; it is in the *Clinica Veterinaria* that Dr. Bernardina not only speaks of radium, but widens the field of his remarks in a brilliant article, headed "The X-Rays, the B-Rays, and the N-Rays." The X-Rays we owe to Roentgen, the B-Rays to Buguerel, the N's to Blondlot—and all because a sensational event, the giving of Nobel's prize to Mr. Buguerel, and Mr. and Mrs. Curie has reminded the public of the handsome discoveries made by those learned chemists, discoveries which have been made now several years. But to-day everybody speaks of radium, everyone wishes he could possess a small piece of this marvellous body whose properties are so wonderful—a desire which cannot be realized right away, as the quantity of pure radium salt that is now existing in the whole world is said to be only three grammes, and one gramme is valued at \$40,000—a nice little figure!

Radium is obtained only in combination with other metals, such as barium, uranium, or thorium, or in the shape of chlorides or bromides. Ores of these compounds, *pechblende*, are quite abundant in Bohemia, Bavaria, and also in America.

The readers of the REVIEW have no doubt read in scientific papers all that has been written of this wonderful metal and its peculiar properties, and it is not my object to reconsider all that is known of the power that radium rays have to render spontaneously luminous phosphorescent and fluorescent bodies, or of their action on photographic plate, on glass, on oxygen, on white phosphorus, etc., etc.; nor even of its power of giving out heat; in fact, of all those properties which make radium appear as a perpetual and inexhaustible producer of energy. It continually gives off chemical, heating, electric and other rays, it possesses an inductive radio-activity, and all without borrowing them from other sources of energy. In fact, says Kauffmann, it realizes perpetual motion.

All these are what may be called chemical actions; they are all well known. Unfortunately the same cannot be said of their physiological effects, as, beyond the fact that they produce hyperæmia, destroy living tissues, paralyze nervous centres, or even end in death, nothing is known, and as a consequence of this want of knowledge, although European and American scientists have already made known some of the results they have obtained in the treatment of some forms of cancerous affections, it will be necessary to complete this knowledge before the great expectations which are entertained in the application of radium rays and their like in medicine can be fully realized.

* * *

IMITATORS OF DR. GARNAULT.—Since the time when the scientific press was taken up with the sensational experiments of Dr. Garnault, which were detailed in the REVIEW, it seems as if the subject of experimental inoculation of tuberculosis to man had been dropped altogether. Yet now and then an article is found on the subject which must not be entirely ignored, as, after all, its contents may serve in a later period to throw light on the subject. If I am to believe the report that I read in the *Journal de Médecine pratique*, of Paris, it appears that in Germany Dr. Garnault has found imitators. A sensational ex-

periment is recorded as having been made by a physician, Dr. Moeller, a student of Koch, who is now director of a sanatorium for tuberculous people. It appears that on March 1, 1902, this doctor began to inject in his veins a culture of tuberculous lesions taken from an orvet (a blind worm). Three of these inoculations were made during the year. Finally, on December 15, a test inoculation of his condition was made by the intravenous injection of an emulsion of a virulent culture of bacilli from human tuberculosis. Guinea-pigs which were inoculated at the same time with subcutaneous injections of similar material died. With the doctor there were only evidences of some fever and loss of flesh during the two months that followed the inoculation. But after that time his health returned and has remained excellent. The weight of the doctor is now normal, and for him, to his own satisfaction, he is out of danger—he is *vaccinated*.

The conclusion drawn by him from this experiment is, that it is possible to vaccinate against tuberculosis by using as vaccine cultures of tuberculosis from cold-blooded animals. This experiment needs a great deal of confirmation, and has a long field ahead before it is considered of practical value. It has already given rise to rather severe and sarcastic criticism, among which is this: to prove that Dr. Moeller is surely vaccinated, inoculate another man who has had no orvet protection and then judge; until this is done the experiment proves nothing.

* * *

A SUCCESSOR TO NOCARD.—Lately there has been in the French veterinary journals a short and dry notice, whose translation reads as follows: "*Alfort School's Chair of Contagious Diseases*.—The competitive examination for the appointment at Alfort of a professor of pathology of contagious diseases, sanitary medicine, commercial and medical legislation was opened on Monday, 18th, and closed on January 24th."

The object of the examination was to find a worthy successor to the regretted Nocard. Mr. H. Vallée passed through the

various requirements with brilliancy, and his name was proposed to the Secretary of Agriculture for his nomination. It is done ; it was well deserved.

For many of us this will read probably as an ordinary item of professional news. And, yet, they cannot but help ask themselves, why did such competitive examination last so long—from the 18th to the 24th of January, especially when only one candidate was present, when only one man felt sufficient ambition, and yet also sufficient confidence to hope to be able to compete so as to have the chance of fulfilling one of the hardest chairs of a veterinary school? A glance at what was required from Mr. Vallée will explain it all.

First, there was the reduction of a memoir upon the *properties of humors in vaccinated animals*. Five hours were allowed for this work, which was to be prepared without books or notes.

Second, to deliver a lecture on the *diagnosis and sanitary measures of tuberculosis*. Three hours were granted for the preparation of this lecture, without books or notes.

Third, after twenty-four hours' preparation, another lecture on the following two subjects: *Conditions which are necessary to the validity of contracts ; feverish meats*.

Finally, a series of practical clinical trials: (1) *On contagious diseases ;* (2) *on rehibitory vices ;* (3) *on post-mortems of animals dead with contagious diseases ;* (4) *on inspection of suspicious meats of butchery ;* (5) *on practical bacteriology*.

Is it strange that European schools, where similar difficulties have to be overcome before a professorship is obtained, are considered as entitled to the high rank they occupy as schools where a good education can be obtained? What has just been read for this chair of contagious diseases is also required for all the other departments.

* * *

THE CURABILITY OF GLANDERS WITH MALLEIN.—The subject of the curability of glanders, demonstrated by Nocard in such an irrefutable manner in 1897, was brought back some time ago before the Société Centrale by Mr. Mouilleron, who

reported four typical cases, which had been in the service of the Omnibus Company.

Submitted to severe hygiene, under the observation of a sanitary veterinarian, these horses received no therapeutic treatment ; they were kept at regular but light work, and received a rational alimentation. During that time they were subjected to malleination, and were destroyed only after mallein had ceased to react two or three times in succession. Of these four cases, three were kept three years, and one four. One horse was malleined five times, one four, a third twelve, and the last eight. When they were destroyed the virulence of the lesions that were found was tested by microscopic examination (method of Löffler), already used by Nocard in his experiments in 1897, by cultures in special media and by inoculation in the peritoneum of guinea-pigs with solution of the suspected products, made in sterilized water. All these experiments gave negative results and proved that, beyond doubt, the four horses had recovered.

This record suggested to another member of the Society, Mr. Brun, to relate the case of another animal which he had treated, first because of an attack of lymphangitis of one hind leg and which he was on the eve of turning over to the sanitary authorities to be destroyed, because of a manifest reaction given by the horse with mallein. However, before the animal was destroyed Nocard was called ; he advised to wait, recommended watching, and prescribed malleination at intervals. After several months the horse was returned to his owner as cured and has worked ever since.

All these cases speak well in favor of the chances that some horses have to get cured from glanders, but they do not prove the infallibility of the result ; they do not suggest relaxation in the application of the sanitary measures ; and, yet, when one thinks of the many valuable animals he perhaps has sent to the knacker's yard for trifling and . . . doubtful lesions of the septum, how thankful he must be to those who have discovered mallein with its diagnostic and its curative (?) properties.

A NEW SUTURE NEEDLE.—Before closing, I must call the attention of our friends who do much surgery to a new needle invented by a four-year student at Alfort, which, from the inventor's name, is called the Chavance needle. I have seen it used by the professors at Alfort and others, and when presented by Prof. Cadiot to the Société Centrale, it was referred to the Commission of Prizes. I think it is worth knowing.

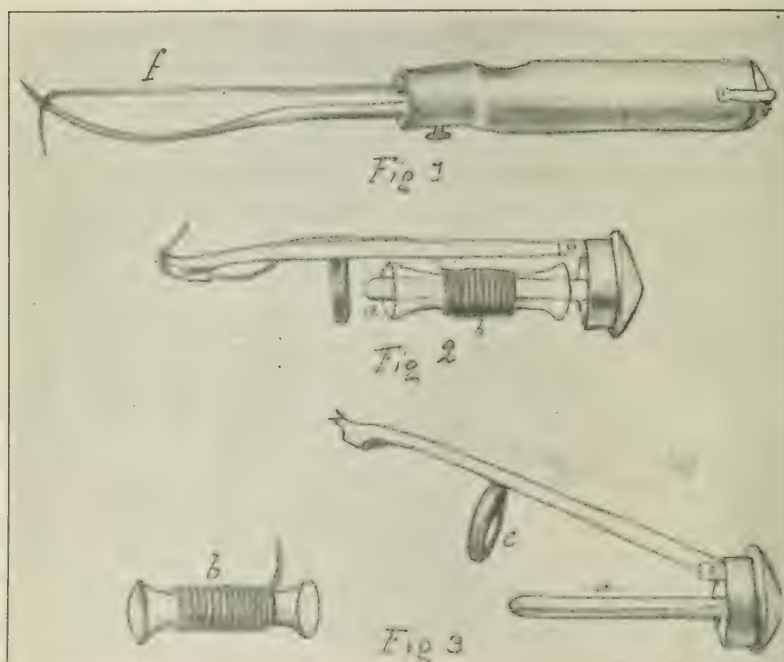


FIG. 1.—Needle ready to make suture with.

FIG. 2.—Spool-holder with spool *b* turning on axle *a*.

FIG. 3.—Spool-holder open to place the spool *b* on axle *a*.

The needle can be changed and is movable on its handle which is hollow and contains the thread rolled on a spool. The thread is then kept clean and can be inserted through the edges of the wound without being touched by the fingers. The thread rolled on the spool (*b*), which is kept within the handle, and pulled through the eye of the needle, as in Fig. 1. When the instrument is prepared, it can be sterilized and an aseptic suture

be applied with as many stitches as is necessary. A glance at the accompanying plate will give a full idea how the instrument is loaded and how it works. It is certainly superior to many needles in use, and to that of Reverdin, which is rather delicate; bends or breaks easily. I understand that the author has taken out a patent for his invention. I regret it.

* * *

PERSONAL NOTES.—At a meeting of the Société Centrale de Médecine Vétérinaire of Paris, held Feb. 25, I had the honor to present the Society with the copy of "Diseases of the Horse," published by the Bureau of Animal Industry, which was sent to me to that effect by Dr. D. E. Salmon, one of the foreign corresponding members of the Society. The book was received with thanks.

* * *

I have received the engrossed resolutions upon the death of Prof. Nocard adopted by the American Veterinary Medical Association, and had them delivered to the family of our regretted *confrère*.

* * *

Dr. D. Le May: Your request has been complied with, and the work of Mr. Joly sent to you. I hope it will reach you safely.

* * *

I send thanks to Dr. Van Es for his pamphlet on "Stock Poisoning Plants of North Dakota."

* * *

I have also received the check sent by the Missouri Valley Association and have turned it over to the Nocard Committee. The postal order of the Michigan Association I was obliged to return to New York, but it will be forwarded to the Committee when it gets back.

A. L.

CORRESPONDENTS are reminded that delay in publishing their communications is occasioned only by the great amount of material in hand; the delay does not indicate lack of appreciation of their favors.

NASO-ÆSOPHAGEAL INTUBATION.

This operation in the horse has been brought into considerable prominence recently by several members of the profession, and apparently, from their testimony, it deserves all the publicity it can secure, for it is shown to be a practical and safe procedure in one of the most frequent and fatal disorders of our chief patient, viz., gastric tympany in the horse. In the present number of this journal not less than three correspondents write upon the subject. Dr. J. M. Phillips, of St. Louis, contributes a most excellent paper, fully describing the easiest method of introducing the stomach tube, describes the best form and quality of instrument and predicts that the siphoning of the horse's stomach will take a position in veterinary surgery equal to that of enterocentesis. The Doctor gives the history of the origin of the method as he has known it, which dates back ten years, the idea having come to him from his colleague, Dr. H. B. Piatt, also of St. Louis. The latter gentleman also contributes a letter in the present number upon the injection of normal salt solution in purpura hæmorrhagica, incidentally alluding to the fact that he was the originator of the operation under consideration.

But our friend, Dr. Wm. H. Gribble, of Ohio, goes these gentlemen one better by antedating their discovery of the tube by several years, and refers to the records to prove it, for he contributed an article to the REVIEW in 1890 describing it.

Now that the question has been agitated, other veterinarians may come to the front with documents that will supersede all of these, for Dr. Phillips gained his first inspiration in this line when a little boy, by seeing the picture of a veterinarian administering nourishment to a horse with tetanus by means of a tube passing through the nasal chamber and down the æsophagus. If the author of that old-time print be still alive he may stand up and demand credit for his genius, or his heirs or assigns may seek to file their claims to the discovery.

It makes but little difference to practitioners who first passed

a tube into the horse's stomach for the purpose of permitting accumulated gas to escape or for the removal of fermenting ingesta that may be threatening the life of a patient. It is very possible that such a reasonable and practical procedure has occurred to veterinarians in different parts of the country simultaneously or without the one suspecting that the other was stricken in the same manner. One gentleman, however, has gone to a great deal of trouble in perfecting a practical instrument (a "stomach tube"), he has devoted considerable time to experimenting in order to get the best method of passing the tube, and has prepared for the benefit of his colleagues a clear and concise paper telling all about it, which he this month gives to the profession through the REVIEW. We trust that those who employ this means of treating colics in the horse will give their experience to the REVIEW for the benefit of the practitioners of the country.

THE ANNUAL FIASCO AT ALBANY.

Bills were introduced in the New York Legislature during the latter days of the session just closed to amend the veterinary law, whereby graduates of a two-year college could be registered without examination by the Board of Veterinary Medical Examiners. In view of the high entrance examination required of students in the colleges of this State, the length of the attendance at these schools, and the stringent practice examination exacted of their graduates, it is surprising that men could be found with sufficient audacity to introduce such measures in the Legislature. It is such a radical proposition that we really believe that those for whose benefit it is intended would scarcely be willing to acknowledge its paternity. It was so outrageous that there was little trouble in smothering its flickering light. As usual, Secretary Wm. Henry Kelly, of the State Society, mailed a copy of the Senate and House bills, with the names of the chairmen of the committees to which they were referred, to every member of the Society, and there was such a hearty response that they will never emerge from

the committee-rooms. Senator Stewart, in replying to our letter of protest, said: "In reply to your favor of recent date would say I agree with you in opposition to the bills referred to regarding the practice of veterinary surgery. The bills are *dead* so far as this session is concerned." Assemblyman Nixon gave similar expression in behalf of his committee.

The value of a live and aggressive State Association is emphasized in such an instance as this. Why every eligible veterinarian in the commonwealth does not become a member, and assist in protecting his own interests, through practical and moral support, is hard to understand.

It may, after awhile, dawn upon those who yearly attack the New York practice act, and who are as regularly defeated in their attempts, that they are wasting their time and energy. Our laws are as strong as Gibraltar as long as the profession has sufficient energy to assert its rights through a righteous and vigorous appeal to the manhood and justice of our law-makers.

WE acknowledge receipt of No. 1, Vol. I, of the *Quarterly Bulletin of the California State Veterinary Medical Association*, a creditable little magazine of twenty-four pages, containing original papers, articles concerning the welfare of the profession of the Pacific Coast, and items of news and interest to veterinarians. While it is not very pretentious in its aspirations, it is destined to do much good to the profession if well supported by the interest and encouragement of those whom it seeks to serve, and who are asked to contribute to its pages. It will prove a means of interchanging not only scientific ideas but ways and means of guarding the welfare of the profession in its struggles to elevate its ranks in a section where the non-qualified practitioners almost equal those who have a legal right to practice. The *Bulletin* publishes a complete list of all those who are registered in the State, numbering about 175, as well as the names of those who have not the right to register, about 110, and who are designated "Illegal Practitioners." The Prosecuting Committee of the State Association has notified every man in the

latter list to desist from practicing, and have proceeded against a number of them, winning their case in each instance. We welcome the *Bulletin* to our table, and trust it may prove of great benefit to the profession.

A LARGE section of the June REVIEW will be taken up with a splendid original paper by Dr. W. L. Williams, professor of surgery and obstetrics at the New York State Veterinary College, entitled "Teratology of the Hyo-Mandibular Gill-slit in the Horse." The article will be elegantly illustrated with original drawings, and is the result of much research upon the part of one who has contributed a great mass of valuable original material to veterinary literature, and one who thinks and reasons on his own account, and is not afraid to give expression to his convictions. If we were blessed with more members of our profession as tireless in the pursuit of conclusions upon points of doubtful knowledge, we would soon clear up many phenomena that are now obscure and little understood.

THE skeleton of a mastodon, in a state of excellent preservation, even the hair and skin remaining, has been unearthed in the Yukon District. It is valued at \$50,000.

ON March 17 Governor Mickey of Nebraska issued a sweeping proclamation calling for the treatment of cattle afflicted with mange, itch and scab. The Governor ordered that during April, May and June all cattle in which the disease exists must be dipped. All the sheriffs in the State are charged to enforce the new regulations and report to the State veterinarian. The method of treatment ordered is that adopted by the United States Bureau of Animal Industry.

WOMEN BLACKSMITHS.—A blacksmith's shop managed entirely by three women is one of the interesting sights to be seen in Kansas. The mother took entire charge of the business about fourteen years ago upon the death of her husband and had her daughters brought up not only to shoe a horse, but to understand every branch of the trade as well. The mother died, and now the three daughters, one of whom is married, have five men in their employ and carry on a very prosperous business. They personally superintend the shoeing of every horse.

ORIGINAL ARTICLES.

TREATMENT OF PARTURIENT PARESIS.

• BY W. H. RIDGE, V. M. D., TREVOSE, PA.

A Paper presented at the Annual Meeting of the Pennsylvania State V. M. Association, at Philadelphia, March 9, 1904.

The form of treatment has been so varied that one could scarcely conceive what would be the orthodox treatment. Let the treatment be what it may, one could scarcely be accused of malpractice. Practitioners are opposed to large drenches, especially of irritating medicines. Also purgatives, if given, should be administered early. Many of the prescriptions offered would be amusing, especially to future veterinarians, if recorded. We can scarcely say we made any advance until the Schmidt-Colding treatment of injecting a solution of potassium iodide into the udder was offered to us in 1898. This Schmidt treatment was the first real advance toward a scientific treatment.

Many of the members of this Association were favored by our energetic State Veterinarian, Dr. Pearson, who sent out directions with the outfit for treating a few cases by this method. The results were beyond expectation. Many who dreaded seeing a case of this complaint soon found by the Schmidt treatment that they had 80 per cent. recoveries, and that the disease had lost its terrors. This stimulated investigators to study this line of thought and to modify the treatment. This has brought us to-day to a line of treatment which we might almost claim as specific. It will be useless to occupy your time to take you back a number of years to tell you the modes of treatment that have been advised; but, looking over the last two years of our journals, we find several writers giving their views on the treatment. We can see that udder injections were not discarded by any. Many did not place reliance in potassium iodide as a curative agent. All close observers were of the opinion that a large amount of air thrown in with the solution aided in the recovery.

Dr. W. E. A. Wyman, Portland, Mich., recommended saline solution with carbolic acid added, this solution to be injected into the udder the same as the potassium iodide solution. Dr. Wyman claims as good results as he previously had with the Schmidt treatment. He says by distending the udder with saline infusion its activity is possibly arrested and thus a chance given for the equalization of the disturbed circulation, thus a removal of the anæmic state of the brain, and a return to health.

Dr. J. C. Callander, of Parkersburg, W. Va., reported similar conclusions, using saline solutions for injections.

Dr. D. R. Kohler, Boyertown, Pa., advocates Schmidt's treatment without modification, but recommends giving strychnia, aloes, nitrous ether and ammonia, as a drench.

Drs. S. Brenton, Detroit, Michigan ; Dunphy, Ex-State Veterinarian, Quincy, Mich. ; Waldron, member State Examining Board, Tecumseh, Mich. ; and Judson Black, Richmond, Mich., advocate the substitution of trikresol for the potassium iodide, and claim equal if not better results.

Dr. A. W. Baker, Brasher Falls, N. Y., advises the addition of creolin to the potassium iodide solution for udder injections.

From the foregoing reports we can readily see that there was something yet that was needed to make the Schmidt treatment ideal. Many used simply boiled water and claimed it was as good as if the potassium iodide was added.

Then came the report from Lucerne, Switzerland, of M. Knusel, who treated 22 cases of milk fever with oxygen, inflating the udder, and all recovered.

Dr. E. H. Lehnert, Storrs, Conn., then reported a case in detail, and evidently a very bad case. After inflating the udder with oxygen, she made a quick and good recovery.

Drs. White and Plaskett, Nashville, Tenn., say they have been using oxygen in the treatment of all milk fever cases for some months in a great number of cases and with not a single fatal case.

Drs. Tennant and Barnes, of London, Ont., Canada, have reported six cases without a fatal termination.

We have the reports of many recovered cases by this method of treatment, with only losses that occur from mechanical pneumonia, or such unavoidable occurrences.

This led the writer to try this mode of treatment, and it certainly surpasses all previous methods. During the last two years we had thirty-five cases, four of which were treated with oxygen, thirty-one with Schmidt's potassium iodide solution injected into the udder; 18 recovered and 13 died, or were destroyed. The four that had the oxygen treatment recovered promptly and fully.

Case I.—Registered Guernsey; fourth calf; calf one day old; found down in the morning; owner had given sodii sulphate the day before as she was very fat. I administered potassium iodide solution in the udder. At night found her comatose and labial breathing, lying on the side, somewhat tympanitic. I inflated the udder with oxygen. Next morning she was up eating and gave us no further trouble.

Case II.—Jersey; calved yesterday; this morning was not feeding well; was weak behind. Gave sodii sulphate in the afternoon; was again called at 5 P.M.; temperature 99° ; down, unable to rise; had all the symptoms of milk fever. Inflated the udder with oxygen, and gave small doses of belladonna. At midnight, six hours after, she was found up and eating. Owner left her as safe, to retire. Next morning at 8 A.M. I found her down and apparently in a very low condition; temperature 99.5° . I would not have suspected that she had been up, if owner had not given me the information. Again inflated the udder with oxygen. At 1 P.M., five hours after second inflation, she again got up; did not have a relapse.

Case III.—Jersey; found down in morning; evidently had been down several hours; subnormal temperature; all the symptoms of advanced milk fever; calf day and a half old. Inflated udder with oxygen at 8 A.M. At 2 P.M. still down; again inflated; next morning up eating, no complications.

Case IV.—Holstein; third calf, one day old; very heavy milker; down about three hours and very restless. Inflated ud-

der with oxygen at 8 P. M.; next morning found her down, resting nicely; rolled her over and inflated udder with oxygen at 8 A. M. At 3 P. M. she rose and did not have any complication.

They all recovered quickly and with no trouble to attendants, as the animals soon regained consciousness and rested in a normal position.

The tank I used was made by the S. S. White Dental Co., Chestnut Street and Twelfth, Philadelphia.

The tank is 13 inches long and 3 inches in diameter, and holds 40 gallons of oxygen; it weighs 11 pounds 3 ounces filled, and 10 pounds 11½ ounces empty, the 40 gallons of oxygen weighing 7½ ounces. There are 5½ ounces in the tank after 7 inflations. The cost of the tank filled and complete with tubing, etc., is about \$10.00.

STERILITY IN CATTLE—ARTIFICIAL INSEMINATION.—In the *Veterinary Record* for Dec. 12, 1903, W. Paner, M. R. C. V. S., relates the case of a breeder who bought three calves from a friend, who had never had a case of sterility on his farm. No. 1 has had two calves, but, since then, although she has been served several times, remains sterile. No. 2 has never had a calf, and it matters not how frequently she goes to the bull she fails to become pregnant. No. 3 has given birth to three or four calves, but recently cannot be gotten with calf. It is at this time that artificial insemination is recommended. With the first, the os uteri being too hard to permit of the introduction of the inseminator, it was necessary to puncture it with a trocar. In due time the cow became pregnant, and calved without difficulty. In the case of the second cow less difficulty was experienced in introducing the inseminator, she becoming in calf and delivering without incident. In the third case, however, the result was negative. For what reason? Perhaps microbic infection. In the three animals there was no hæmorrhage from the operation.—(A. L.)

"I NOW have bound in good leather binding five volumes of the REVIEW and the current volume I shall also have bound. I find them handy for reference, and I often obtain valuable aid from them. How any veterinarian can practice without having the REVIEW as his constant companion I cannot tell. Many things found in it are worth many times its cost."—(D. D. Keeler, V. S., Salem, Oregon.)

ON THE USE OF THE STOMACH TUBE IN THE TREATMENT OF ACUTE STOMACH DISORDERS.

BY J. M. PHILLIPS, D. V. S., ST. LOUIS, MO.

Siphoning the stomach must become a universal operation in all cases where the life of the horse is endangered by gaseous distention of that organ, or where the progress of inflammation may be checked by the removal of fermenting or irritating matter from the stomach.

No veterinarian has been long in practice who has not been disappointed many times in the treatment of cases of acute indigestion, where gases form so rapidly, and in such volumes, that immediate rupture of the stomach or suffocation is imminent; or in those cases, less severe, where gaseous formation has been controlled, in part, and regurgitations are seen in the œsophageal groove, and later by gastritis with elevation of temperature to 101° - 104° , and pulse from 60° - 100° . Antiferments, antacids, antiseptics and physic—stimulants, carminatives and anodynes, followed by febrifuges and heart stimulants, have been administered often without avail.

All surgeons have decided views about the use of the trocar, of eserine, barium chloride or of arecoline. The indications for these are definite, and their remedial qualities are duly recognized.

The fact I wish to advocate with all due emphasis is, that the stomach tube is just as important in the treatment of acute stomach disorders as the above mentioned agents and like medication are in the treatment of intestinal disorders.

What more rational treatment of stomach disorders than to relieve that organ not only of dangerously distending gases, but also of the fermenting mass from which these gases are formed? What instrument better adapted to realize this treatment than a properly fashioned stomach tube?

The idea of siphoning the stomach has doubtless occurred to others as to myself; as well as the same question of, "Can

it be done safely and effectively?" My first idea of a stomach tube for the horse was obtained, when only a boy, from a small treatise on the horse, the author of which I do not remember. In this pamphlet was a cut of a horse suffering from tetanus. A tube was shown passing through the nasal chamber into the œsophagus. The author claimed that through this tube the horse could best be nourished.

After entering the profession of veterinary science, the practicability of applying this method in cases of stomach disorders always appealed to me when in an extremity. Besides, there was the fact that, in human practice, the stomach tube has been practical and indispensable. Why not, with added reasons, should not a stomach tube for the horse be made eminently effective? Such were some of my ideas and questionings before experimentation began.

To pass a piece of stiff tubing seemed quite rude, and less promising in good results for the horse than such a stomach tube as the highly polished one used in the case of the human subject. Thus, for years, my ideas, deductions and conclusions remained without practical demonstration.

In 1895 I heard of Dr. H. B. Piatt's having employed a tube in cases of stomach derangement with success. Later in that year I saw him demonstrate the operation. I purchased a tube similar to his, and used it until I obtained one manufactured to meet more nearly my idea of what a stomach tube should be, the original dimensions of which I have changed but slightly.

Since October of the above mentioned year until the present, I have made use of the tube in my practice whenever it was indicated, and my ideas concerning it have passed from the theoretical stage to that of demonstrated certainty. The results I have had have been most gratifying in almost every case; in some, surprisingly so.

I can assure the profession that it is one of the most practical operations in veterinary surgery. Not that there is no chance of failure. In what operation is there assured certainty? In

the use of the tube, the percentage of failure is so low as to warrant an enthusiastic use of it. In my own practice 5 per cent. would cover it.

The use of the tube is indicated in acute indigestion, engorgement of the stomach, gastritis following acute indigestion, toxic gastritis and ordinary chokes.

While taking a post-graduate course at the Chicago Veterinary College in the winter of 1903, I met practitioners from nearly every veterinary college in the United States and Canada, and some from European colleges. I learned from them that none had practiced this operation, and none of their *alma maters* had taught any form of siphoning the stomach of the horse.

In view of my past success in the use of the tube, I felt it my duty to tell what I knew about it, and to express my belief, springing, in part, from my experience, that, through an intelligent use of the tube, a much larger percentage of valuable life can be saved not otherwise possible without the tube.

On invitation of the post-graduate class, I demonstrated the operation of passing the tube, having a clinic horse for a subject. I made four other demonstrations before different classes of the Chicago and McKillip Veterinary Colleges—all with no other purpose than to show the physical possibility of passing the tube. As a result of these operations on clinic horses some curious phenomena occurred and some interesting deductions were reached which the space of this article forbids to record.

HOW TO PASS THE TUBE.

When the use of the tube is indicated and decided on, wet the tube and dust it over thickly with powdered slippery elm bark (pwd. *ulmus fulva*) for about two feet of its length. Run the hand up and down the dampened and dusted surface to give the tube a perfectly even slippery surface. Vaseline or lard may be used if the operator prefers or has no powdered elm at hand. Dampen the left nostril (if you are a right-handed man) of the horse, and dust a little powder on it. With the horse in front of you, standing to his left front, have your assistant hold

him as quietly as possible with his head raised high enough for easy operation ; at the same time the assistant may hold up the disengaged end of the tube to prevent the horse stepping on it.

Enter the tube into the left nostril, previously made slippery, using the left hand to push the tube and the right to direct it. The index finger of the right hand will keep the tube on the floor of the fossa while pushing with the left hand, and so materially aid in passing the tube.

After the tube has passed from 10 to 14 inches, its further progress may be interfered with by the turbinated bones. If so, press or lift upward with the left hand (instead of continuing to push), and, reaching into the nostril as far as possible with the index finger of the right hand, press the tube downward. This will direct the point of the tube downward, and the steady pressure of the left hand, as indicated, will direct the tube toward the pharynx. *The tube should always be kept on the floor of the fossa from beginning to end of the operation.*

When the tube reaches the pharynx, the horse will usually attempt to swallow. Just now the operator should be on the alert ; for, if the tube is pushed at this moment, the passageway to the œsophagus is direct. The epiglottis has closed over the glottis and the muscles of the pharynx grasp the tube and direct it into the œsophagus. The certainty of this is known : (1) By the resistance that the muscles of the œsophagus give in grasping the tube. (2) When the horse swallows again, the tube is carried down a few inches. (3) No breath escapes through the tube—though sometimes the gas from the stomach will escape with such regularity at each expiration that the operator may be deceived as to its source. The sense of smell will help determine this.

If the tube enters the trachea, the operator will know it, for (1) The resistance to the tube is *very slight*. (2) It will usually excite a cough, though not always. (3) Expired air will be noticed coming through the tube. I have the assistant hold the end of the tube toward his or my cheek to determine the expi-

ration of air until after the tube has passed this critical point. After thus carefully pointing out these distinctive phenomena of passing the tube, it would be stupid even in a beginner to attempt to pass the tube on to the lungs.

The tube can often be passed without the horse's assisting by swallowing; but in other cases it is impossible.

Once the tube has passed this critical point, see that more of the tube is coated with the lubricant; keep lubricating two or three feet in advance of inserting. Gradually press the tube downward (better have the horse assist by swallowing), until the stomach is reached.

If the tube refuses to enter the œsophagus without the aid of the horse, which sometimes happens, enter the tube just far enough that the end will be within the pharynx. Then tickle the pharynx with the end of the tube by short, quick pushes and withdrawals. Stand in a position to watch the muscles of the throat. When the horse swallows, give the tube a long, quick push, and you have entered the œsophagus. Then proceed to push the tube at short intervals, thereby giving the œsophagus time to adapt itself to the circumstances, until the stomach is reached. This will generally be indicated by gas escaping freely, or by a gush of semi-liquid food.

A tube should have a mark indicating when the point has reached the œsophagus, and another to indicate when it has reached the stomach; so that, in the latter case, if there is no return flow, liquefying by injecting water may be begun.

As has been said before, by the time the tube has reached the stomach, the most of the gas may have escaped through the tube.

Once the tube is passed into the stomach, an opportunity is given for thoroughly emptying that organ of irritating and fermenting food, and for cleansing it with warm water and anti-ferments; leaving it in a condition to recover its normality. My practice has been to pump in from one-half to a gallon of quite warm salt water, and then to siphon it out with what it might bring with it. Then another and another injection and

siphoning, until the water comes away quite clear; often using from six to twelve gallons of water. In acute cases, gas and semi-liquid food often escapes with great force. In cases of gastritis of several hours of duration where there is œsophageal regurgitations—the pulse 70 to 100 and the temperature 103° to 104° —the fluid that escapes is sanguinolant, resembling the contents of a highly colored serous abscess, and of a high temperature. It is marvellous how quickly these latter cases recover.

Generally from the moment the tube enters the œsophagus the gas begins to escape, and relief is so definite that the horse will stand reasonably quiet until the stomach is reached, and will be perfectly submissive through all the procedures that follow. It sometimes requires a little dexterity in those desperate cases to keep in a position to operate, but in comparing it with the use of the trocar in intestinal flatulence, I have found less trouble with the tube. The position at the horse's head as against the flank is to the operator's advantage. Besides, the horse's movements are more guarded in distension of the stomach than of the intestines.

In an occasional case the tube will persistently pass into the trachea. Should this be the case, and you are unable to induce the horse to swallow, the operation would prove a failure. In an abnormally small fossa, or in case of a tumor in the fossa you would fail. In either case it would be advisable to try the other nostril.

The tube should be withdrawn slowly and carefully. I think it advisable to give the tube a few moments rest at intervals; pushing the tube back an inch or so to allow the mucous membrane of the palate, and the Schneiderian membrane to regain their normal condition. If the tube has not been properly coated, and the fossa small, in withdrawing the tube you may cause more or less hæmorrhage, which in no case in my experience has been serious.

CHARACTER OF THE TUBE.

The tube should be very similar in appearance and quality

to the human stomach tube. When it is lifted by the middle the two ends fall in a straight line downward, and do not assume the curled up shape of common tubing. This is an important factor. The tube thus more readily passes over the glottis; and enters the cardiac orifice more easily. The end being conically shaped, it thereby finds less resistance. It is compressible, yet stable enough to pass without doubling. It is long enough, when inserted, to reach from the stomach to the ground, thus securing perfect siphoning. The external diameter is such that it will pass through the nasal chamber; and the internal diameter large enough and uniform enough to allow oats to pass. These essential qualities combined make the tube most practical and effective, whereas lacking even one of these renders it far less effective.

I have found it very difficult to have them made with the perfectness that I have demanded. In fact, I was unable to do so until I had made a visit to the factory to express my ideas and plans in person. I realized the fact that the operation would fall into disrepute if there was not an instrument that the profession could depend on.

ACCESSORIES TO THE TUBE.

(1)—A salt-cellar filled with powdered elm to dust over the dampened tube before passing.

(2)—The tube's efficiency is more than doubled when an injecting pump is used. The tube will relieve the stomach of gases, of itself very grateful to the patient. If the contents of the stomach are quite fluid, they will come out often with surprising force. But possibly, while you may be complimenting yourself on the results, the flow will suddenly stop. A large kernel of corn, or a mass of solid food cuts off the stream. Under the circumstances, some might blow the offending matter back into the stomach; but such a procedure is offensive, unscientific, unnecessary and less effective than if the offending matter is thrown back with warm water injected by the pump; which also serves to liquefy the contents and secure a better flow. The pump should *never be used to draw out* the contents

of the stomach, as it is both unnecessary and dangerous. It should be used only to pump into the stomach, care being taken that no air is pumped in with the water.

OF WHAT THE TUBE IS CAPABLE.

(1)—Of averting rupture of the stomach by allowing the gases to escape.

(2)—Of preventing a reforming of gases by siphoning out the fermenting food.

(3)—Of washing out the stomach, thus leaving it in a state of rest and repair.

(4)—Of relieving inflammation of the stomach by removing all irritating matter from the mucous membrane.

(5)—Of relieving an engorged stomach, thereby preventing indigestion, enteritis and laminitis.

(6)—If not too late, of preventing death from toxic gastritis.

(7)—Of dislodging oat chokes.

The author prefers this method to all others.

CONCLUSION.

I would not wish to be considered over-zealous, so I have tried to be conservative as to results obtained by the use of the tube, as will be acknowledged by the thousands who shall hereafter adopt this mode of treatment.

Some may become over zealous and use the tube where it is not indicated. But a conservative operator will prize a stomach tube as highly as a trocar. We all know the trocar is often used when it is not indicated.

I make the assertion that the stomach tube will be indicated as a necessity to save life oftener than the trocar.

Need we say more of it?

DR. AND MRS. WILLIAM SHEPPARD, of Sheepshead Bay, N. Y., were surprised by a large party of friends, at their home on April 1, the occasion being the twenty-fifth anniversary of their wedding. They were the recipients of many beautiful presents, including a loving cup, the presentation speech being delivered by Mr. Frank T. Clark, superintendent of the Coney Island Jockey Club.

PHARMACEUTICAL ITEMS OF INTEREST TO VETERINARIANS.

BY H. JENSEN, M. D. C., WEEPING WATER, NEBRASKA.

Read before the 39th Regular Meeting of the Missouri Valley Veterinary Association,
Kansas City, Mo., Feb. 15th, 1904.

Having so often in veterinary meetings advocated that veterinarians ought to prescribe in place of dispensing, and having met with almost a unanimous opposition, it occurred to me that a few pointers in regard to dispensing, as well as remarks on several preparations, favorites of mine, might possibly be appreciated. I still hold that the veterinarian who prescribes has a leverage and advantage over the one who does not. The intelligent prescriber has the friendship and assistance of the druggist as well as his admiration, because the veterinarian in this Western country who can write a good prescription is a scarce article. The druggist's admiration means a good word, a good word means money in your pocket. How often do we find medicines dispensed by some veterinarians in old whiskey flasks or beer bottles, not to mention the horrible incompatible mixtures that are poured down the throats of our dumb friends, and ointments dispensed in any old blacking-box handy, with a liberal amount of the contents on the outside, sometimes with, but mostly without a label, the component parts improperly mixed, and finally wrapped in a piece of old newspaper to complete the job. That is not a good advertisement for our profession. Now, gentlemen, remember I do not say that this is always the case, but only too often it is true. If, however, you are a dispenser, dispense right. Have your glassware clean, your ointment cans and jars the same; write a clean label and put on your box or bottle, wrap it in a nice clean paper and watch the result.

Manufacturing pharmaceutical preparations does not pay the veterinarian; it requires special knowledge, considerable apparatus and equipment; but there are a number of preparations

used in every-day veterinary practice that you cannot afford to buy. Let me suggest a few with some modifications which without changing their physiological action reduce their cost.

There is a preparation made by Berry Brothers called colonial spirits; it serves all the purposes of alcohol for external use; it has a pleasant odor and none of the irritating effects of wood alcohol. By using this preparation you can manufacture your tincture of iodine for 40 cents per pound, by using the following formula:

Iodine resublimed, 5 i
Colonial spirits, Oi

By using this menstruum you can reduce very materially the cost of the following tinctures frequently used in veterinary practice, viz.: Tr. arnica, tr. aloes and myrrh, tr. cantharides, tr. benzoin comp., and you will not be disappointed with the effects.

You cannot afford to buy Fowler's solution; you can make it for 25 cents a gallon.

Arsenious acid, gr.600
Pot. bicarb., gr.1200
Water, Ci

To make this you need a Florence flask of a pint capacity. Put the arsenious acid and pot. bicarb. into the flask, add 10 ounces of water and boil over an alcohol flame until dissolved. The Pharmacopœia prescribes an addition of spts. of lavender comp., which I think in veterinary practice had better be left out. It gives an odor which makes it impracticable to be given in drinking water, as some horses refuse to drink it, and without the spts. of lavender compound they will drink it readily without any trouble.

There are a number of fancy dusting powders on the market, especially the price, but here is one that has given me good results, and can be made for 12 cents per pound:—

Ac. boric,
Naphthaline,
Zinc carbonate, āā lb i
Triturate thoroughly.

I have in my infirmary an antiseptic liquid soap that I think a great deal of when I want to render a surface aseptic previous to an operation. It is made as follows:—

Mercury bichlor.,	3 iij
German green soap,	3 xvj
Colonial spts.,	3 x

Dissolve the soap in the spirits and dissolve the mercury separately in 2 ounces of the spirits, and mix the two solutions. I keep this in a barber's squirt bottle. A few squirts of this liquid soap on the point of operation and a little water, makes a good lather, enables the operator to cleanse and render the parts strictly aseptic.

In the various painful thoracic afflictions, such as pneumonia, pleurisy, etc., the question often arises, what shall I use locally? Hot water? Yes, very good, if it could be kept hot. Mustard? Too irritating and expensive. I have a stimulating liniment that contains no fats, does not blister, is a beautiful white preparation that never separates, and can be made for 30 cents a gallon. This is the way it is made:

Pulv. castile soap,	
Pulv. ammon. chlor., āā	3 iv
Stronger ammon. water,	3 ij
Fl. ex. quillaya bark,	3 i
Turpentine,	3 xxviiij
Water, <i>ad</i>	Ci

Agitate for 15 minutes. In all cases where you want a rubefacient, you can find nothing better nor more convenient. It possesses considerable value as a prognostic agent—in this way, if it does not make an animal move around pretty lively, I say "dead horse." This remark is not intended as a joke.

I am going to say a few words about blisters. We have all been disappointed at various times with our blisters, the reasons for which are triplicate. First, a poor quality of cantharides; second, improper methods of manufacture; third, improper application. To begin with, one should use nothing but strictly pure Russian cantharides. Next, how make it? Remembering that the active principle, cantharides, is a very volatile sub-

stance, the ointment should not be heated to a boiling point in an open vessel, because the results will be disappointing; the cantharides will go up in smoke. Here is the way that I do it:

Pulv. Russian cantharides,	℥vj
Pulv. euphorbium,	℥i
Lard,	℔ij
Yellow wax,	℥viij

Procure a can with a tight cover of suitable size, triturate the euphorbium and cantharides together and put into the can. Melt the lard and yellow wax in a separate vessel, and when melted stir thoroughly into cantharides and euphorbium in the can, put the cover on tight and place over water bath for half an hour; let it cool, but when it commences to set (no sooner) mix it thoroughly together.

In conclusion, I will relate my experience with a preparation that is destined to take a front rank in veterinary therapeutics, in the treatment of malignant tumors and intractable wounds which have so far as I know been to the veterinary profession a source of annoyance and disappointment.

I shall relate a few cases. A year ago a gentleman drove up to my place and asked for a remedy to put on his horse's shoulder. On examination I found a deep-seated abscess in the levator humeri muscle. I advised opening, but this was objected to and foolishly I gave him a blister to apply. Four weeks later he brought his horse to me and it was a sorry looking object indeed. There was a well-defined tumor of a fibroid character. I punctured the centre of the tumor, expecting to find pus, but found only a solid mass. I directed him to wash it out with a 1 to 1000 formalin solution, then saturate a piece of cotton with an abscess-dressing I gave him and insert it into the wound. Three weeks later he was returned and showed no improvement; if anything he was worse. I then excised the entire mass and instructed him to continue to use the abscess-dressing. In a short time the horse was returned, the cavity was filled in with a fibrous mass, and then followed a six-months' siege of cutting and cauterizing, with no advantage.

About that time my attention was called to oil of thuja, manufactured by Messrs. Porter, Ryerson & Hoobler, of Omaha, and having some in stock I thought the next time he came back I would have something to give him anyway, praying for something miraculous to happen in the meantime. My patient came back. I removed all that fibrous mass that I could, and gave my client the following preparation :

Oil of thuja, ̄ ss
Lanoline, ̄ viij

I directed him to apply daily after washing the parts. The next I heard from the case the wound was looking fine and the owner was hopeful. Twenty-two days later the horse was brought in for my inspection. I found the cavity filled with healthy granulations and absolutely no induration around the edges of the wound. There was just a little raw surface, which is now completely healed.

Case No. 2.—Mr. Aug. Glaubitz, of Murdock, Nebr., brought to my infirmary in June, a bay gelding, seven years old, with a small wound on the right masseter that had hard indurated edges, a rough and angry looking surface, and an induration extending deep into the tissues. I excised it and sutured the wound. Four days later the horse was returned and the wound was beautiful to behold, the stitches torn out and the edges indurated. Mr. G. was asked to leave the horse, which he did. I excised it again with the same results, and in a short time the whole cheek was involved. About this time Mr. G. called, and, after taking a look at his horse, said, "Good-bye, 'Scott'", and I thought it was good-bye also. (Now I wish to say to a possible inquiry, why did you not use oil of thuja before it became so bad?) The fact of the matter is, I never thought of it. The thought struck me then that here is a good place to try thuja, and I prepared an ointment as before and applied it once a day after washing. The result was almost instantaneous; the induration softened up in a short time and the cure was complete.

Case No. 3.—J. T. O'Day, of Nehawka, Nebr., brought in a large gray gelding for treatment. Extending from the region

of the neck ten inches down the right shoulder was a large, ill-smelling tumor that had been excised several times, but which had always returned. I excised it again and at once applied thuja ointment, and it was well in a short time.

It is also an excellent remedy in hypertrophy of the nasal septum. A four-year-old mare was brought for treatment. She was snoring so loudly that you could hear her a block away, and there was a mucoid discharge from the nose. Upon examination I found the nasal septum swelled to such an extent that it nearly closed the nasal passage. Formerly I have cauterized, but did not obtain desired results. I now prepared the following:—oil of thuja, ℥ iij., terraline, ℥ iv., and sprayed the nose three times a day. A cure was effected very shortly.

In affections due to animal parasites a correct diagnosis at once indicates the special treatment which should be applied to other cases. This, too, is true of diseases due to a specific-microbe.

Thus it will be seen from the foregoing that the laboratory and the veterinary practitioner are intimately associated, that the one exists for the benefit and enlightenment of the other, and as one devoting his entire time to laboratory work, I cannot urge upon you too strongly the necessity of a closer union, that each may benefit through the observations of the other.

DR. F. C. GRENSIDE, of New York City, has an article in the *Breeder's Gazette* of April 27, entitled "The Causes of Digestive Troubles." He often writes for that journal.

THE ANTI-DOCKING BILL before the New York Legislature came up for passage on April 7th, and was defeated by a vote of 23 to 13. Veterinarians from New York City testified before the committee that the operation of docking, when performed by qualified surgeons, under anæsthesia and antiseptis, was devoid both of pain and danger from complications.

"THE last volume of the REVIEW has outdone all predecessors in the quantity and quality of the material it has afforded its readers. The REVIEW is doing a great work in keeping its readers abreast of the times in matters that pertain to veterinary science, and in encouraging them along the lines of mutual helpfulness."—(S. Stewart, M. D., D. V. M., Dean Kansas City Veterinary College, Kansas City, Mo.)

THE LABORATORY AND THE VETERINARY PRACTITIONER.

BY CHAS. H. HIGGINS, B. S., D. V. S., PATHOLOGIST, HEALTH OF ANIMALS SERVICE, DOMINION OF CANADA.

Presented at the Second Annual Meeting of the Central Canada Veterinary Association, Ottawa, Can., Jan. 27-28, 1904.

In considering the subject of the laboratory and the veterinary practitioner, let it be understood that the term laboratory in this instance refers only to the laboratories engaged in the scientific investigation of pathological and bacteriological subjects, rather than those devoted to chemical and physiological studies.

That a laboratory can materially aid the practitioner goes without question in this age of specialization and higher research, but the average veterinarian of the older school is usually unaware of the assistance which can be rendered, owing to the advance in this particular line having been made since his entry into active practice, consequently he was not privileged to study the subjects of pathology and bacteriology during his college course.

It is necessary to briefly probe the history of modern pathological and bacteriological research in this connection. In so doing we find that advances in microscopy have been parallel with the advances made in the polishing of lenses, rendering it possible to detect some of the smaller forms of life and the pathological changes in a given organ or tissue.

Among the first microbes to be discovered was that of anthrax, by Davaine in 1879, and in view of our present knowledge, this is only what would naturally be expected, the organism being among the largest of any causing a disease fatal to animals and man.

A study of the literature of this particular disease is very interesting, dealing as it does with the skepticism of eminent authorities who were very conservative in the acknowledgment that a discovery which would revolutionize existing sanitary

laws was about to be made. It was only in 1880-82 when that renowned bacteriologist, Professor Koch, corroborated the views of Davaine, that the theory was fully accepted by scientific men.

After it had been conclusively shown that anthrax was due to a specific bacillus, which, when taken directly from the blood of an affected animal, repeatedly washed, to remove the possibility of even a trace of the poisonous material, save the organism in question, could again produce the disease in susceptible animals, the possibility of other diseases having their origin in a similar organism was more readily accepted.

To-day there is scarcely a disease of a contagious nature the causative agent of which has not been discovered or its possible existence readily accepted.

The laboratories of to-day are engaged in the study of the more scientific points connected with the contagious diseases, devising better methods of preventive treatment and control, also they are trying to solve the cause of affections which appear to be due to a specific infectious agent which has eluded detection. There is too another branch of work, consuming a large share of their attention, and that is in the diagnosing of diseases or diseased conditions met in the field by veterinary practitioners and others.

As steel is sharpened by rubbing against steel, so is it possible for the veterinarian to sharpen his wits and be of more service to his clients by the keen observation of his cases and recourse to the laboratory for their further study. In this I do not mean that it is necessary for the veterinarian to take a course in laboratory methods and solve the questions arising, but I do hold that it is his duty to himself and his client to take advantage of existing facilities which are his for the asking.

In making the above statement it is only fitting that I should point out very briefly the manner in which you benefit and may further profit from careful and painstaking laboratory investigations.

All are aware of the many biological products placed on the

market for the prevention and treatment of the more common diseases of the domesticated animals. These are the result of careful laboratory investigation by conscientious workers. At present their use is limited, many being too expensive to be used in routine practice, but nevertheless they are the forerunners of cheaper products which will find favor. A few among the more common products which are within the reach of every one are anthrax and black-leg vaccines, tuberculin and mallein.

In the production of anthrax vaccine, by that noted chemist, Pasteur, was the origin of the various vaccines based upon the principle of an attenuated or weakened virus, of which black-leg vaccine is one.

Tuberculin and mallein have in the past few years attained great prominence in the eradication and control of tuberculosis in cattle and glanders in horses. These two latter products are toxins and contain the toxic products manufactured during their growth in a specially prepared broth to which a certain amount of glycerine has been added.

In order that laboratories may accomplish the ends for which they were established, it is absolutely necessary that they be supplied material with which to conduct their work that cases of a similar nature may be repeatedly studied in their various aspects. Veterinary practitioners are in a position to supply this, but, from neglect and carelessness, valuable material is lost, originating as it does in an obscure case. These very cases are the most interesting to the investigator and if careful notes are forwarded with the material, subsequent investigation may place the individual practitioner in a position to more correctly diagnose succeeding cases and apply treatment, which, if the affection is a contagious one, will aid in its prevention and possible eradication.

The forwarding of material to a laboratory for diagnosis leads the individual practitioner to exercise his powers of observation to a greater degree and should lead to more thorough autopsies, which are too infrequently performed by veterinarians, considering that there is scarcely ever any objection raised

to this procedure. The holding of autopsies should be frequent, for they indicate the correctness of the diagnosis and also enable a more scientific treatment of future cases presenting similar symptoms.

The correct diagnosis of tumors, as to their structure, will enable the veterinarian to more easily decide as to the prognosis and the advisability of continuing treatment. If a tumor is of such a structure as is known to recur, the value of the animal is lessened; while if a microscopic examination indicates that it is benign there need be no fear of its recurrence.

OF American animals the moose, elk and caribou are natural trotters.

THE chiton, a sort of shellfish, holds the record of possessing 11,000 eyes.

ANIMALS that burrow and live under ground lose the power of sight or have eyes that are merely rudimentary.

“THE REVIEW enhances
As the world advances.”

—*Newton G. Le Gear, V. S., Waco, Texas.*

A FREAK FOAL.—Dr. A. O. Kennedy, of Columbia, Tenn., writes as follows under date of April 11: “I have quite a freak in the way of a colt’s head. The eyes are blended together in the centre of the forehead. The bone of the upper jaw stops about four inches short, but the lips extend on a little further, nearly even with the underlip. The colt lived about an hour after I delivered it. Otherwise the colt was perfectly formed.”

DRS. T. EARLE BUDD and Whitfield Gray, whose terms as members of the New Jersey State Board of Veterinary Medical Examiners expire May 5, 1904, have both been re-appointed by Governor Murphy each for the full term of three years. On the fifth of this month it will be just two years since the Board came into power. The other members are Dr. T. E. Smith, Jersey City; Dr. T. B. Rogers, Woodbury, and Dr. Wm. Herbert Lowe, Paterson. The next meeting of the Board for the examination of candidates for license to practice veterinary medicine, surgery and dentistry in the State of New Jersey will be held at the State House, Trenton, some time during the month of June. The office of the Board has been established at Paterson, in connection with President Lowe’s office.

ETIOLOGY AND TREATMENT OF AZOTURIA.

By B. M. FLINT, V. S., FAIRLEE, VERMONT.

In that affection in horses termed azoturia—a condition characterized by spasms of the large muscles of the posterior part of the body and of the limbs—the urine is dark-colored, of high specific gravity, and containing a large amount of urea, and sometimes albumen in small amount. There is excess of albumen in the blood, which has undergone some complex chemical changes, and is in a degenerated condition, which render it capable of producing certain morbid phenomena in the system, such as inability to rise, convulsions and the presence of dark-colored urine. The chief cause is the allowance of food too rich in nitrogenous materials, with insufficient exercise, and the affection is mostly seen when the animal is put to work after a period of idleness. In renal affections depending on abnormal conditions of the blood, it is clear that the first indication will be to bring about a return of the vital fluid to a normal condition. This will be accomplished by acting on the bowels and skin, and paying special attention to dietetics.

In azoturia it is essential that the bowels be acted on by a purgative, and the skin by diaphoretics, so as to remove as expeditiously as possible the effete materials which exist in the blood, and which give rise to the characteristic and serious symptoms. If the urinary secretion be deficient, diuretics will be indicated, those being selected which have an effect on the solid portions of the urinary secretion.

Treatment.—First attend to the bowels, giving eserine, or arecoline, as a rapid intestinal evacuant; giving one grain doses hypodermically. Apply a mustard paste to the loins, keep the body well clothed; use the catheter if the case indicates paresis of the bladder.

As a diuretic, to increase the urinary secretions, and act upon the solid portions of same, and also as a diaphoretic, throwing a part of the burden of elimination upon the skin,

the following formula has given me the best of results:

℞ Fl. ex. jaborandi, *ʒ* i
 Fl. ex. buchu, *ʒ* i
 Spts. nitre dulcis, *ʒ* ij
 Cold water, Oj

M. Sig. : Give horse at one dose, repeat in two hours if not relieved.

I find that jaborandi is an agent of great value in azoturia to relieve "deficient secretion; marked dryness and heat of skin and mucous tissues; pulse full, hard, sharp and strong. Muscular pain, muscular spasm. Urine suppressed, of deep color and high specific gravity. Marked restlessness; uremic poisoning and convulsions."

Works of reference: Hoare's "Veterinary Therapeutics and Pharmacology." King's "American Dispensatory."

DIPPING TANKS are being built in the Kansas City yards with a daily capacity of 1,500 cattle. The new rules of the Bureau of Animal Industry require the treatment of all cattle suffering from scabies. The "swim" in the vats is 40 feet long.

HORSES IN THE UNITED STATES.—According to the Government statistics there were in the country on Jan. 1, 1903, 16,557,373 horses of a combined value of \$1,030,705,959. On Jan. 1, 1904, the number of horses had increased to 16,736,059, an increase of 178,686 over the figures for 1903. In 1902 the total was 26,149 smaller than in 1903. The valuation of all the horses in the country at Jan. 1, 1904, was \$1,136,940,298. This valuation shows the horse stock of the country to be worth \$106,235,339 more than in any former year, though a larger total has been shown in point of numbers.

VERDICT AGAINST A VETERINARIAN.—Judgment in a civil suit was given yesterday afternoon in favor of David Vies against Dr. W. E. Wight, a veterinary surgeon, of Pittsburg, by Justice George Giles, the amount of the suit being \$150. Vies alleges that he shipped a horse to Pittsburg to have a large lump removed from its jaw. He alleged it was killed in mistake for a horse with an incurable disease. The surgeon failed to appear at the hearing and judgment for the amount of the value of the animal was given against him.—(*Pittsburg, Pa., Leader, April 15*).

REPORTS OF CASES.

"Careful observation makes a skillful practitioner, but his skill dies with him. By recording his observations, he adds to the knowledge of his profession, and assists by his facts in building up the solid edifice of pathological science."

A CASE RESEMBLING ANTHRAX OF LONG DURATION.

By C. C. SHEPPARD, D. V. S., Centreville, S. D.

Will some one please name and classify the following case :

The history of the case, as given by the owner, on January 15, 1904, is that he first noticed in June of last year, that the horse (a gray gelding, 11 years old, weight 1050 or 1100 pounds, in good flesh) appeared stiff, arched his back, stumbled occasionally, but ate well, and did his work up to December. On turning out in the morning to go to water, he noticed he was acting queerly ; did not go to the tank, but started in a circle, from left to right, head elevated very high, stopping occasionally and turning up lip ; this only lasted a few minutes, when he went to the tank and drank ; returned to barn, began to eat as usual. Was not worked for some time. On harnessing him up to do some work, noticed an enlargement on left side of neck, over fourth cervical vertebra. The growth was very slow ; no other symptoms noticed. He called in a country practitioner, who gave him a liniment, telling him he had been stepped on by another horse, and would be O. K. in several days. The growth continued further up toward the head, but not showing any symptoms of pain. The gait gradually shortened and was *stilty*.

On the night of Jan. 15 he went down and could not rise. I was called the next day, Jan. 16, and found the horse cast in stall, limbs stiff, muscles rigid, pulse 28, temperature 99, respirations normal. Abscess on left side of cervical region over the fourth vertebra, extending anteriorly half way down to head, posteriorly to shoulder, resembling a dislocated vertebra, or a bulging of something against the levator humeri ; muscle very hard. The horse showed signs of severe pain. When touched hard would open mouth in a slow, sluggish manner, and keep it open for some time. No fluctuation to indicate pointing or collection of pus. Bowels had moved that morning freely ; feces rather hard. The horse was raised, and propped up on sternum ; partook of food in a greedy manner ; drank some water ; deglutition rather difficult. He was raised in slings, but refused to support himself—just doubled up, suffering so severe-

ly that he was let down and bedded heavily. A physic ball was given; passed catheter; urine rather thick, but showed no hæmatin (not analyzed). A blister was put on the tumor; gave tonic for blood and heart. Returned the following Wednesday to find conditions more aggravated. Sub-normal temperature, 95; pulse 26, intermitting, arterial tension high, muscles rigid and set, *dead feel*; no results from physic nor blister given previous visit. Swelling extended farther toward head; showed signs of wanting to eat, but could not chew well; no attempt to move, except when pricked under tail with pin, and then only feeble. A seton was passed as deeply as possible, saturated with oleum crotonis, with orders to move frequently to encourage suppuration.

Owner reported Saturday that the horse had died the night before. I went next day to hold post-mortem. The carcass looked as if it had been blown up with a quill; very offensive odor, although the atmospheric temperature was from 20 to 36 below zero. As soon as the skin was punctured gas escaped in such volumes that it whistled, and was so offensive that my assistants left me. A square 4x10 inches was removed directly over the fourth cervical vertebra, underneath the levator humeri. The flesh was black as coal, resembling clotted blood, and as I could not stand the pressure from the gas, very *gracefully* made my escape to the fresh air, and ordered the carcass burnt, or buried very deeply, and covered with quicklime.

Now, if some professional brother will lend me assistance in making a diagnosis of the case, I will be very thankful. Anthrax in the horse as described by our eminent writer, Professor Williams, will cover the case, if it were not of so long duration. Was unable to make any microscopic examinations, or any cultures.

PIGS WITH BROKEN-DOWN SHOULDERS.

By E. I. SMITH, D. V. M., Franklinville, N. Y.

Considering the varied courses that nature may pursue, it is not strange that many cases with a simple history may come under one's observation which are indeed puzzling. The following is one that was very difficult for me to diagnose.

March 1, 1904, Mr. K. requested me to visit his premises and diagnose an ailment that was prevailing among his young pigs, which showed symptoms far different than he had ever observed.

History.—The pigs were about six months old, and were

taken away from the sow at four weeks of age and placed in a small sty; then fed upon bran, middlings, meal and ground oats, changing from one food to another at different intervals. The feed was mixed with water, no milk at all whatever being given. They had experienced no rough handling; apparently flourished at the beginning upon the feed. There was but very little opportunity for the animals to have access to the earth floor. At the above date they would weigh about fifty pounds each. So far as known, they were born perfectly sound and appeared as such when removed from the mother.

Semeiology.—There were different stages of the trouble. The worst ones were hardly able to move from their nest, and when forced to move would squeal and show signs of pain. When they walked their forward parts would sink down, protruding elbows, short stepping with the fore feet, cautious and slow movement; would easily go down upon the sternum if forced to move fast. Some of the others that were just showing the first symptoms, would walk stiff-legged in front, show the same signs of pain when first moved, but they were able to approach the trough and defend their rations, while the more advanced subjects were unable to obtain their food against the stronger ones, consequently they were beginning to show emaciation. One of the most severe cases was caught, a free movement and tension was exercised upon the fore limbs, which evidently caused pain. The pigs appeared normal in every other respect; movement of bowels and the urine appeared natural. They would eat freely so long as they were able to come to their food.

Post-mortem.—One of the most advanced subjects was destroyed and a careful anatomical dissection was carried out. The internal organs were perfectly normal. The joints were free and easy in motion, and upon excising the capsular ligament the articulations were found to be well lubricated, smooth and clear in appearance. While dissecting around the scapulo-humeral joint a slight congestion was observed in the subscapularis muscle. The muscles were carefully removed from over the entire area of the lower extremity of the scapula. There had been a fracture of the scapular neck all the way around, giving a marked convex surface to the external face of the scapula due to the abnormal position the parts had taken during adhesion. The parts had begun to unite, as they were, solidly together. Both scapulae were alike. One of them was boiled out, but the parts still retained a firm attachment to each other, indicating every appearance of recovery.

Treatment.—Thinking the fracture in so many at once was due to a lack of proper bone nutrition, I was led to prescribe the following:

R Calcii phosphas, ʒ viij
 Ferri sulphas, ʒ i
 Misc. Sig. Fiat chartae No. xx. Give one powder daily
 to all of the pigs.

The treatment, on the other hand, may not seem feasible, but I felt that an experiment would not be out of order under such severe circumstances, and if one treatment failed another could be resorted to.

After three weeks of experimenting I saw Mr. K. and he informed me that they were improving, and he thought he was going to raise all of them for marketable shoats. I do not presume through such a limited experience in treatment to claim the credit for recovery due to the above prescription, but the question is, in my mind, What was the real cause of the fracture in so many at one time, and was the treatment applicable?

DENTIGEROUS CYST.*

By Dr. J. F. ROUB, Monroe, Wis.

On September 12, 1903, there was a two-year-old colt delivered to me at my infirmary for treatment. Said colt had been under treatment by owner for six months previous to above date. The only visible sign, externally, of any ailment was a fistulous opening on the middle and antero-external border of the left ear, discharging from two to four ounces of pus every twenty-four hours.

Modus Operandi.—Cast, the colt was firmly secured. I proceeded with the operation, cleansing the parts. I passed a bougie down on the inside and along the left border of the ear down into the conchal cartilage. With scalpel, I laid the sinus open, but cautiously avoided the conchal cartilage, for it would be rather embarrassing to the operator to have an ear drop or lop to one side after an operation. The sinus extended down as far as the middle of the internal surface of the zygoma and over the coronoid process of the inferior maxilla. After laying the sinus open to the latter point, by manipulation I could detect what I surmised to be a dentigerous cyst, it being convexed externally. With molar forceps, and pressing them down and over the cyst, I broke down the alveolar process, and then I had

* Read before the Wisconsin Society of Veterinary Graduates at the Annual Meeting, February 4, 1904.

no difficulty in removing the tooth. After cleansing the wound, I liberated the colt, which was turned into a box stall.

In the course of a few days there was a profuse discharge. Not being satisfied with the condition and appearance of the wound, I secured my patient and made a thorough examination, being satisfied that I had another tooth to contend with, but did not make the second operation on this date. For two days previous to this at our semi-annual meeting at Racine, Dr. Beckwith, from Shullsburg, stated that he would visit me the following week and take our County Fair in at the same time, I promising to have a few cases to operate on on this date. Likewise I saved this subject for one of our clinical cases. Dr. Beckwith, and I assisting, removed two teeth just inferior to the one I had previously extracted.

Treatment.—Simply tincture of iodine once per day. The colt made a fine recovery.

Now just what channel misplacement of tooth cells take during foetal life that produces dentigerous cysts I will leave to the society for discussion.

COMPLETE OCCLUSION OF ŒSOPHAGUS BY GASTROPHILUS EQUI.

By EDWARD L. LEWIS, M. D. C., V. S., Austin, Tex.

On March 30th, in response to a message, I was called to see a sorrel horse, 10 years old, belonging to Mr. J. H. P. Davis, of Richmond, Texas. Upon arrival, I found him down, sweating in patches, mouth partially open, mucous membranes pale, pulse feeble. Every few moments he would raise his head and look to the side. He rapidly lost ground, and in twenty minutes or so was dead. In an extended and careful post-mortem held immediately, every organ and part was examined, but absolutely no pathologic or abnormal condition was apparent until I had opened the stomach. Then on feeling around the cardiac orifice of the Œsophagus I came upon a semi-soft, bulky mass. Upon exposing the lumen, I found it completely closed and packed with bot worms. Inflammation of the Œsophageal walls was present. The occlusion was one and a half inches from the cardiac orifice. There was not a vestige of food in the stomach, but instead a goodly number of the same species. Stomach pale, flabby, internal textures anæmic; general marasmus.

The case is an interesting one only because they can be con-

sidered rare—at least, I can find no records; and because it proves that sometimes the old bugbear of the farmers (bots) will cut funny capers. This horse had been on the decline two weeks before death.

AN INTERESTING CASE OF DISTOKIA IN A COW (MONSTROSITY.)

By J. S. LESLIE, V. S., Sedalia, Mo.

The case was in a Durham cow, five years old. Was called to see this case March 5, and when I arrived found all four feet of foetus protruding only as far up as the fetlocks. I first tried to locate the position of the foetus, but was unable for some time to do so. I finally located the head, which was turned to one side; then I anæsthetised the cow with chloroform, and tried to



FIG. 1.—Showing position of Foetus.



FIG. 2.—Showing where abdominal cavity should be.

push the hind limbs of foetus back, by using the repeller, but was unable to do so. Then I resorted to the shears, and removed the hind limbs, this being done very easily. I then removed the foetus, and discovered I had a monstrosity.

The head was well developed, but was directly between the

shoulders; the abdominal cavity was absent, there being no skin nor muscles over the intestines whatever; the vertebral column from the head to the hips was in a rainbow shape, the hips being directly over the shoulders. This is why all four feet protruded. With one hind limb on either side of the head, over the back, the intestines were exposed and enveloped by the placenta only, and were not very well developed; the lungs and heart were very small, the lungs not larger than a man's fist; the vagina and rectum were one, the perineum being absent.

A PIG WITHOUT AN ANUS LIVES TWO MONTHS.*

By Dr. J. F. ROUB, Monroe, Wis.

The latter part of last June I was called out five miles to treat a cow. Just as I was ready to start for home, my attention was called to a pig near by that was feeding on grass with the rest of a litter of six. The pig was hearty and eating as greedily as any of them in the litter, but vertically its diameter was greater than its length. I asked the owner to catch the pig and we would make an examination, it being a male, but no testicles as well as no anus being visible. Previous to this date having operated on young animals and produced successfully an artificial anus for them, I thought I would do likewise in this case, but failing to find any excrement, I destroyed the pig.

Autopsy.—Found both testicles in abdominal cavity. The end of the bowel in formation represented the end of a finger stall and was situated three inches anterior and on a level of the floor of the pelvis and suspended by mesentery. This pig was two months old and, in my opinion, would have lived three weeks longer. Anyone doubting the veracity of facts in this case may write to William Clayton, Monroe, Wis.

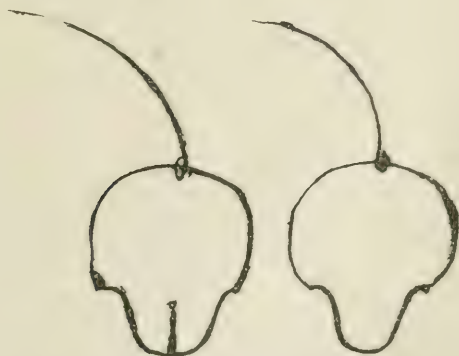
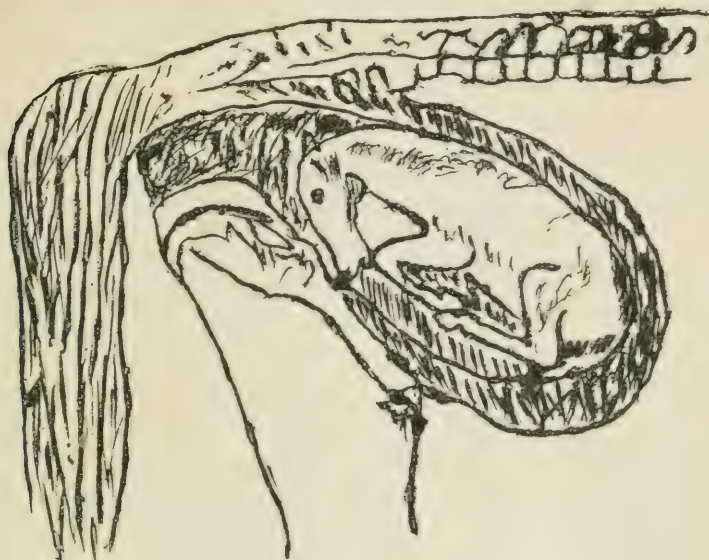
A CASE OF OBSTETRICS.

By C. A. BAXTER, V. S., Circleville, Kansas.

Called at 6 P. M. April 9, 1904, found mother down; ears of "mule" foal protruding from vulva; frequent severe labor pains; foal was tightly wedged in pelvis. I first placed ring with small tip over nose; tip between lower maxilla; traction cord held by an assistant. Second, placed ring over posterior limb, between hoof and fetlock: then another over remaining

* Read at Annual Meeting of the Wisconsin Society of Veterinary Graduates, February 4, 1904.

limb. Now placed repeller against breast. Had an assistant to repel, while I grasped hoof with palm of hand. With back of hand against the vaginal wall to keep hoof from injuring



Ring to slip over nose (small point presses in between inferior maxillary bone.)

Ring to slip over foot (two of them.)

mother, brought traction on that limb, which brought it in delivery form. With the other posterior limb the same procedure. I was now ready to bring the head in place, and the foal was delivered with light traction. Why I use rings instead of hooks: should they become loose you will not injure the

mother. I have used most all kinds of obstetric instruments, but I find my rings safer and easier to handle than any hook, chisel or saw. Try them. Any blacksmith can make them under your instructions. Have them heavily nicked; use sash cord for traction cords. I find it best to get the limbs in place first, as the head is forced up and presses the arm very tightly if straightened first.

It is believed that the ostrich can see objects behind as well as in front of it. Any one standing directly behind an ostrich can see the pupils of its eyes.

A DISPATCH from Boston states that glanders has invaded some of the leading private stables of that city. The old campaigner Gill Curry, 2:09 $\frac{1}{4}$, is stated to have contracted the disease and the city veterinarian has ordered him shot.—(*Breeders' Gazette*.)

MILK FROM THE ZOÖLOGICAL VIEWPOINT.—Diffloth, in the *Presse Medicale*, points out that cows "educated" to give 25 quarts of milk daily, by massage of the udder and giving of fat foods, when their natural output is only 8 quarts, do not give so good a quality of milk under the circumstances.

"I HAVE had the REVIEW for nineteen years, and would not be without it. I look for my REVIEW every month, and when I compare the present numbers with those of the old days I find a great change for the better; it has grown so large, and it is up-to-date every time."—(*E. M. Beckley, D. V. S., Meriden, Conn.*)

TEXAS FEVER.—An article in a recent issue of the *Review of Reviews* has it that, "mortality from Texas fever has been reduced from 75 to 10 per cent. By a conservative estimate through the work of the Texas and Missouri Experiment Stations alone there has been saved to the cattle interest of Texas not less than \$350,000, and the work is now only well started."

THE address on "Agriculture in the Common Schools", delivered by Dr. W. H. Dalrymple, of the Louisiana Experiment Station, has been printed and issued in pamphlet form by the State Board of Education of Louisiana. This address was delivered last February, and was well received, and is very valuable. We regret that we have not space to reproduce it. It may, however, be obtained by applying to the State Board of Education, Baton Rouge, La.

EXTRACTS FROM EXCHANGES.

GERMAN REVIEW.

By ADOLPH EICHORN, D. V. S., Bureau of Animal Industry, Kansas City, Kansas.

THE APPLICATION OF THE SILVER PREPARATIONS OF CREDÉ IN OPHTHALMIC CASES [*Dr. P. Meyer*].—M. applies the powder of itrol on wounds of the conjunctiva, also in operations on the eyelids, lachrymal glands, etc. According to his experiences, it very soon diminishes secretion and suppuration, usually the swelling disappears, and speedy and lasting improvement follows. He obtained the same satisfactory results with the itrol treatment in trachoma, pannus, inflammations of the cornea, etc. In operations on the eyeballs, M. works exclusively with collargol. The silver preparations of Credé secure the fields of operation aseptic, and besides are harmless.—(*Centralbl. f. prakt. Angenh.*)

THE TREATMENT OF SEPTIC AFFECTIONS WITH INJECTIONS OF COLLARGOL [*Dr. Credé*].—Credé recommends, in cases of infections, where quick and effectful action is wanted, the intravenous injection of collargol, in which after a few hours a marked improvement is to be noticed. If this improvement is only of a short duration, the injection is to be repeated after 8 to 12 hours; otherwise it is sufficient to repeat it after 24 to 36 hours. Credé uses his new, more soluble (1.20) and stable collargol in a 2 per cent. solution (injecting in man 0.08 to 0.12 gm.), and he intends to raise gradually the percentage to five. Credé applies collargol, in severe cases of phlegmonæ, gangrene, septicæmia, puerperal fever, pyæmia, anthrax, etc., and obtains remarkably quick and lasting results.—(*Archiv. f. klin. Chirurgie.*)

RECOVERIES FROM SPINAL MENINGITIS IN DOGS WITH ESERINE-PILOCARPINE INJECTIONS [*Stiethenroth*].—The author uses successfully injections of eserine-pilocarpine in spinal meningitis of dogs, prescribing the following formula: R. Eserine, 0.05 gm.; pilocarpine, 0.10 gm.; aquæ dest., 20.0 gm. M. fiat solution. Soon after the injection the reaction appears; the number of respirations are increased, evacuation of the bowels and vomiting follows with profuse salivation. In some cases the animal will appear lifeless. After the reaction passes away, signs of improvement are noticeable. To prevent extreme ex-

haustion of the animals, the injection should not be repeated before the third day. During the treatment only small quantities of meat should be fed to the animals, and shortly before the injection all food should be omitted. A dog was brought before the author, with the history that the animal shows signs of lameness in the hind legs. On examination abrasions of the toes were noticeable, and on quick motion urine was passed in drops. The diagnosis was established, and as the author had not on hand the required drugs, the treatment was not applied before the third day, and by this time complete paraplegia was present. After the injection of 1.0 gm. of the eserine-pilocarpine solution, the same day the dog was able to use its hind legs—however, the walk was unsteady, the toes touched the floor with their upper surfaces. After three days 1.5 gm. was injected, the walk of the animal was more steady, and only showed slight weakness when running. On the sixth day 2 gm. was injected under the skin, and the dog was discharged cured on the same day.—(*Berl. Thier. Wochenschr.*)

ITALIAN REVIEW.

By Prof. A. LIAUTARD, M. D., V. M.

FISTULOUS FRACTURE OF THE LOWER JAW OPPOSITE THE RIGHT INTERDENTAL SPACE [*Dr. Guiseppe Pichi*].—Consulted for a horse, bought recently at a fair, which was carrying on the right side of the jaw a bony tumor a little back of the region where the chain of the curb-bit passes, there was no history to be obtained. The animal refused all food and was rapidly losing flesh. A superficial examination revealed the fact that not only the exostosis was situated on the outside of the jaw bone, but it also spread on the inside in the intermaxillary space. The growth was not painful, the skin movable over it on the outside, but on the inside it looked inflamed. The animal was ugly and would not submit to the examination of the mouth until he was properly secured, when by pulling the tongue out of the mouth, a fistula was observed in the interdental space, which communicated with a cavity, having the appearance of an alveolar cavity in way of cicatrization. This was wide, measured four centimetres in circumference and was packed with fermenting food. As exploration with a probe was about to be made, the horse fought terribly and further consideration had to be postponed. The cause of the trouble was not detected then, but its nature was a fistula, which demanded sur-

gical interference. This was carried out by the throwing of the animal, disinfection of the wound, washing of all fermenting food and scraping of all the necrotic loose pieces of bone. The original trouble had been a comminuted fracture, due to a blow or what? and had repaired as best it could naturally. A counter opening allowed careful and repeated washing of the cavity. Small splinters of bone now and then sloughed away, and at the last visit made by the author, the case was doing well.—(*Nuovo Ercolani*, Oct. 15, 1903.)

UPON UMBILICAL HERNIAS [*Prof. Gualducci*].—The author has often observed those hernias in colts; they are due to the bad condition of the feeding, and seldom do they disappear in adult life. In colts of three to seven months, he resorts to the solution of sublimate in collodion, and later uses nitric acid. In hernias with a wide ring, plasters and bandages are applied with much benefit. These are left in place for 30 or 40 days. Umbilical hernias of young pigs disappear with age; they are treated successfully with bandages and plasters. In bovines these hernias are rare. Gualducci has observed only five cases. In one the tumor was as big as two fists. It was treated with the application of a clamp and ligature. With the other four, the trouble took place immediately after birth, the viscera protruding outside. Two died rapidly. A third was operated by disinfection of the protruding gut, its return into the abdomen and suture of the skin. Recovery followed with complications. In another case the protruding small intestine had been torn by the mother of the calf. Some fifteen centimetres of the intestine were amputated, the intestines sewed up, returned into the abdomen, the ring, muscles and skin, were brought together with sutures, and a bandage put over the whole. Death took place the fifth day, from broncho-pneumonia. At the post-mortem the intestine was found perfectly healed.—(*Giour. del R. S. et Acad. Vet. Ital.*, Oct., 1903.)

CONTAGIOUS CATARRHAL METRITIS IN MILCH COWS [*Dr. R. Saccani*].—Having failed in finding any account of similar trouble in the books at his disposition, the author publishes the following as a contribution towards its further study: Out of two hundred cows, kept in a little town, some fifty were affected with the following symptoms: In general appearance nothing abnormal, good appetite, rumination, milk secretion not changed, but a catarrhal discharge exists from the vagina. It has the consistency of albumen, rather white in color, and in some cases yellow. The quantity varies between 500 and 1000 grammes

a day. At first it was considered of little importance, but as it lasted, seemed to render the cows sterile and many had to be sold to the butcher, the case assumed a more serious aspect. On inquiring as to the cause, it was found that all the sick animals had been served by the same bull; but when this animal was looked for he could not be found; all that could be known was that he had a swelling at the penis. The investigations had to be limited to the condition of the cows and the characters of the discharge. At the autopsies of the animals that were slaughtered the uterus was found larger than normal, with the walls thickened and congested. Its cavity contained a certain amount of the discharge. At the examination with the microscope this was found to contain a microbe, moving slowly, coloring well with aniline preparations, but not taking the Gram—not pathogenous to rabbits nor guinea-pigs—not growing in gelatine nor agar at the surrounding temperature. The incubation of the disease is rather slow, varying between one year and 18 months. The cows first diseased were more sick than those affected towards the last. The treatment consisted in antiseptic injections.—(*Il Nuovo Ercolani*, Jan. 15, 1904.)

A CASE OF POLYDACTILE [*Dr. G. B. Dalan*].—A six-months-old colt, product of a native Italian mare, by a Russo-American stallion, had two supplementary fingers, one on each of the fore legs. Situated on the inner face of the metacarpophalangeal region, with nail and bony phalanges, they interfere with the action of the little animal, by their position and their size, and were besides very unsightly. Their amputation was decided upon at once, and carried out. Thrown down, the colt was properly secured, the parts well shaved and disinfected, and the supplementary organs removed one after the other. There was no bleeding of any account, no section of important tissues, nerves or others, and after sewing the skin, an antiseptic dressing was applied. Cicatrization, almost without suppuration, took place in a few days. As soon as the animal was relieved, he jumped up, traveled freely and went to his mother for a good sucking. Of the two supernumerary organs the right one was the longer, attached to the middle of the inside of the fetlock and adherent to the cartilage of the internal large sesamoid; it hung down as far as the coronary band of the normal hoof. The finger of the left side, was also shorter and less developed; it was attached to the lower extremity of the internal small metacarpal bone, and reached only the middle of the pastern. Recovery in seven days. (*Clinica Veterin.*, Jan. 30, 1904.)

DERMOID CYST ON THE SHOULDER OF A MARE [Dr. Enrico Bergamaschi].—At a previous visit, the author had already noticed on the right shoulder of this mare, in the superior third of the acromian spine, the presence of a tumor, measuring some 14 centimetres in length and 4 in width, a tumor which by its spherical shape and puffy appearance he had considered as a cyst, for which he advised removal. The owner, who wanted to dispose of the mare, objected to an operation, but finally consented to it. The animal was cast, and the parts thoroughly aseptised. An exploring puncture made, allowed the removal of a whitish, milk-like fluid; through a small incision, a mass was extracted, consisting of hairs glued together with a substance looking like sebaceous secretion. This mass measured 13 centimetres in length. The incision was enlarged and a cavity, lined with hairs, was found formed by a cystic membrane, which was carefully dissected out. The surface was then thoroughly scraped with the knife of Volkmann, and the wound closed with stitches. Cicatization by first intention was perfect in two weeks.—(*Clinica Veterin.*, Feb. 13, 1904.)

CLINICAL OBSTETRIC OBSERVATIONS [Dr. Domenico Gualducci].—Among those recorded by the author are two referring to abnormal retention of the foetus. *The first was in a cow.* Taken with violent pains, she was supposed to be suffering with retention of urine. She made violent efforts and expelled only a few drops of water. As it had been reported that the cow had not been covered, she could not be pregnant, and by the story of the stableman she had not been seen to urinate, it was decided to use the catheter. As this was going to be introduced, the cow made a violent effort and through the vulva a viscous material flew out. Vaginal exploration allowed the hand to feel a collection of dense liquid, of dark chocolate color. After extracting about two litres of this, the hand was pushed easily into the uterus, when it came in contact with a hard body elongated and irregular in shape, ended at one extremity by a round swelling as big as a child's head, the other extremity was rough and knotty. A cord was attached to it and the extraction of the mass completed with moderate traction. It proved to be a foetus. On making further inquiries about the case, it was found that the cow had been covered some 30 months before, and had one calf in due time. After a few months the cow did not come in heat, the abdomen became large, but after a while it passed off. Since that time everything passed on well, but three or four times she had similar short attacks. *The second was in a*

sow. The animal arrived at the epoch of parturition, was taken with violent expulsive efforts, and the author was requested to attend to her. On making a vaginal exploration he found that he had a case of complete torsion of the uterus to deal with, and, failing to reduce it, he advised Cæsarian operation. The owner would not allow it, and asked only for a soothing preparation to allay the pains of the animal. This was granted. The sow had the preparation given, fell asleep, and by degrees recovered completely. Three months after she was slaughtered, and in the right horn of the uterus six mummified fœtuses were found. In the presence of such a result, the author suggests: If in some cases of distokia, it would not be more prudent to resort to similar indications of a sedative and quieting treatment rather than to an operation more or less dangerous.—(*Clinica Veterinaria*, Feb. 13, 1904.)

A CASE OF DYSTOKIA DUE TO A MONSTROSITY.—Dr. A. W. Baker, of Brasher Falls, N. Y., contributes the following interesting case: "In looking over various numbers of the REVIEW and reading the articles of interesting and instructive freaks of nature, I recall to mind a very strange and interesting case that came to my personal observation of a freak in a Jersey cow owned by H. L. Davis, of Winthrop, New York. I was called to see the patient and found upon examination that various methods had been exerted to expel a calf for eight hours previously, the cow suffering greatly. On exploration I found the following conditions: Anterior presentation, with one fore limb and head round position; the other fore limb was in a crippled condition and bent back under the sternum, followed closely by one hind limb. The other hind one was also in a crippled condition and twisted around the neck. The head and neck were normal; as were also the thoracic organs; the abdominal organs were all expelled from the cavity. The skin was normal except that over the ventricle part of the body, which seemed to be turned inside out, but the umbilicus was in a normal condition. The posterior part of the calf seemed to be turned in, or in an inverted condition. After performing embryotomy and removing the crippled fore limb from the body, then the head and posterior limb, proceeded to extract the calf, with the assistance of ropes and usual precautions which came away after some slight resistance. In all my experience I never witnessed or attended such a mysterious and puzzling case, and by which a practitioner might be misled."

ARMY VETERINARY DEPARTMENT.

PETITION OF ARMY VETERINARIANS BEFORE THE GENERAL STAFF.

Dr. W. R. Grutzman, 15th U. S. Cavalry, Fort Myer, Va., informs us that he personally presented the petition of the army veterinarians to the Adjutant-General of the Army, on February 1, 1904, and that it has been forwarded to the General Staff about February 14 inst. Since then he has been unable to learn anything further of the fate of the petition, but he has been advised that it will have to take its natural course as regards consideration by the General Staff. As soon as he learns anything definite he will promptly report.

* * *

THE "NOCARD TREATMENT" OF GLANDERS.

By OLOF SCHWARZKOPF, V. M. D., Fort Assinaboine, Montana.

The address on "glanders" by Dr. J. G. Rutherford, of Canada, published in the "Proceedings of the American Veterinary Medical Association for 1903," just to hand, is of particular interest to army veterinarians who had to deal with glanders in the Philippine Islands under the most trying circumstances. They were trying, because an army in the field is kept moving constantly, and the well-known and approved methods of quarantining infected animals and of disinfecting premises cannot be enforced. At least no provision has been made so far in the army regulations for the application of repeated injections of mallein; all that is permitted by regulations is the killing of such horses as are actually diseased with glanders. However, in two outbreaks of glanders in the Philippines the obstacles in the way of applying this modern method were overcome, and the results obtained were most gratifying. As Dr. Rutherford and the other speakers on the subject call for more experience, it appears proper to contribute towards statistics, and as these tests were undertaken in a tropical climate, the particular results obtained ought to be of interest to army veterinarians who may face similar conditions in the future.

History of the First Outbreak.—On arrival at Vigan, P. I., in September, 1900, I found the horses of the 3d Cavalry stationed there and at various neighboring temporary posts extensively infected with glanders. It could not have been otherwise. The disease had been introduced into the Islands

with our horses—or it had been stationary there, as others wanted to have it—and little had been done to grasp the situation or apply rational measures to check its spread. The horses of this regiment had just gone through an extremely hard campaign with General Young in Northern Luzon. They had been living on the country as best they could, and they were still living on rice in hulls and native grass when I first examined them. They were not in a poor physical condition, but they evidently lacked their inborn vigor and natural resistance against disease. They had been a superior lot of horses, but now they were “heart-broken,” as an officer termed it, and they were certainly ripe for glanders.

In one troop-stable I found three horses isolated in a corner, two in an advanced stage of glanders, the third just developing symptoms of nasal glanders. The “stable,” containing 119 horses, consisted of a temporary shelter made of bamboo-poles, roofed with coarse, native grass. Parallel with it and not ten feet apart, was another troop-stable, containing about the same number of horses. Yet, these three horses, so visibly affected with glanders, had been kept there for some time owing to a doubt as to whether the disease was really glanders or not. After some parleying with the responsible officer, who did not want to have it known that he had glanders among his horses, he finally agreed with my diagnosis, and I reported the facts to the proper military authority. A Board of Survey was called, and the post-mortem examination undertaken, gave overwhelming evidence of the presence of the real, old-fashioned glanders. Eight more suspicious horses were at once isolated, which soon developed clinical symptoms of glanders, and they were destroyed as soon as they presented clearly defined cases. Two horses were killed on October 19, 1900; one horse October 23, 1900; four horses December 7, 1900; two horses December 24, 1900.

In the meantime all the horses of this troop had been carefully examined and watched, and the conclusion was reached that there were at least twenty more suspects among them. It was also found that when a horse, ever so slightly suspicious, was taken out with a detachment in pursuit of insurgents or some other duty requiring several days absence with hard riding, it would return with a clearly developed case of glanders. Hardship had fanned the disease. Under all these conditions, including the constant intermingling of the horses on the picket-line, it appeared hopeless to stamp out the disease by killing off

the actually diseased horses, unless all were killed, and then we would have no mounts. It was, therefore, natural that I looked about for a plan of action more reasonable in scientific theory and more practical in its effects, a plan that would be more in accord with our modern postulates of veterinary hygiene. Nocard had proclaimed to us at that time that when "horses are subjected to repeated injections of mallein, if they are not actually cured by these injections, they at least cease to react, and remain fit for work." That was a tangible proposition which fitted our case well. But when I confided my plan to the Adjutant he asked for printed authority on the subject, and being without any veterinary literature whatever, I had nothing to offer but the above terse statements of Nocard. He also thought it was not in accord with the army regulations. However, he was willing to help me and advised me to first get the sanction of the Troop-Commander. This officer was an old Indian fighter, a hard nut to crack, an autocrat in his realm but an excellent horseman who loved his horses dearly. I appealed to this latter sentiment, holding out hope of saving at least some of his well-trained horses which had pleased so many admirers by their brilliant feats in Madison Square Garden a few years previous. He listened attentively to what I said about "Nocard's *experiments*" and reflected long and hard. I kept silent, seeing that he was fighting it out with his inner self. Finally he said: "I have never heard of this 'Nocard *treatment* for glanders.' It's either a good thing or it is a humbug. You say the old treatment is hopeless, I say it's brutal besides, a disgrace to your science. D . . . the regulations, we are in war. It becomes my duty to save what can be saved. I am with you, and I shall recommend this new treatment to the Colonel. Now, doctor, try to save old 'Rubber Neck.'" (R. N. had been his champion performer.) The next day I was called to the Colonel, who informed me that the Captain had explained to him "Nocard's *treatment*"; that it was not in accord with regulations, but that I should make a written report, including my recommendations, and he would favorably endorse them. This was done; the recommendations were approved by higher authority, and on Dec. 20, 1900, I was told to go ahead. This little tale explains the birth of the term "Nocard treatment" in our Army, which I hope has come to stay in commemoration of the name of our lamented French colleague.

The Test.—Mallein was telegraphed for from the Quartermaster's Department in Manila, and arrived by the first steamer.

It proved to be seven months old, a cloudy, semi-fluid substance, with a smell of decomposition. A long telegram was forwarded, explaining that mallein must be fresh, less than three months old, carefully packed and stored, and not exposed to the rays of the tropical sun. A new supply finally arrived a month later, and preparations were at once made for the test. The remaining horses of the troop, 108 in number, were removed from their stable and quarantined in a plaza one mile away, guarded by sentinels to prevent approach of soldiers and Filipinos. The internal temperatures taken before injection were nearly all 101° F., which by later extensive comparative tests on other horses proved to be the normal temperature in the Tropics.

The result of the first mallein test was as follows: 29 horses reacted in all; of these, 23 horses reacted with a rise of temperature of about 2 degrees (between 103-104); they developed the painful, local swelling at the point of injection, and were visibly affected in their general well-being, but regained their normal temperature in about 24 hours. Six horses had uncertain reaction; one as high as 107° F., while one other horse (No. 105) dropped as low as 99° F. These six horses evinced the severest external symptoms of reaction in numerous ways, and horse No. 105 developed on the third day after injection cord-like swellings of the lymphatics of both hind legs. All these 29 horses were immediately removed from the other troop horses, and especially quarantined in a yard enclosed by an eight-foot high stone wall, the six horses reacting so severely being isolated by themselves. Five of them developed clinical symptoms of nasal glanders within 6 to 9 days respectively after injection, and one horse (No. 105) farcy within three days. They were all destroyed.

In the meantime the original troop-stable had been thoroughly disinfected. The earth of the stable-floor was removed to a depth of about five inches; the centre bamboo-posts holding the roof were replaced by new posts, the other posts, not so exposed to infection, were scraped with sharp Filipino bolos and washed with a strong solution of carbolic acid. There were no mangers, as the horses were fed from the ground on the picket-line stretched in the centre of the stable. New earth was used to fill up the stable-floor. The work of disinfection, although vigorously pushed, had taken ten days, and when finished the 79 horses which had not reacted to the mallein test were again placed in the stable and put to regular service.

The second mallein test upon the 23 horses remaining alive

in quarantine was scheduled to be made within four weeks, but the ordered mallein did not arrive until March 26, 1901, nearly two months after the first test. This second test had the following result: Seven (7) horses showed no reaction, and were returned to their troop for duty; thirteen (13) horses reacted with 2 to 3 degrees F., and were slightly affected by the mallein injection. One horse developed nasal glanders on the 7th day, and two horses came down with farcy respectively on the 3rd and 5th day. These three horses were destroyed on April 3, 1901, while the 13 horses which had shown ordinary reaction and had regained their normal temperature, were retained in quarantine to be subjected to a third test.

This could not be undertaken until May 24, 1901, seven weeks after the second test, when again fresh mallein arrived. The result of the third test was as follows: Eight horses no longer responded to the test, and were returned to their troop for duty; five horses responded with a rise in temperature of 1 to 2 degrees F., and, although they otherwise showed little or no disturbance in their general appearance, it was considered safer to subject them to a fourth test.

This was made on June 24, 1901, when the horses "ceased to react," and were returned to their troop for duty.

Summary result of the test:

Number of horses in infected Troop: 108.

Jan. 25, 1901. Proven healthy by first mallein test	79
Proven infected " " " "	23
Destroyed for glanders or farcy	6
	—
	108

Number of horses in Quarantine: 23.

March 26, 1901. Proven healthy by second mallein test . . .	7
Proven still infected by " " " " . . .	13
Destroyed for glanders or farcy	3
	—
	23

Number of horses in Quarantine: 13.

May 24, 1901. Proven healthy by third mallein test	8
Proven still infected by " " " "	5
	—
	13

Number of horses in Quarantine: 5.

June 24, 1901. Proven healthy by fourth mallein test	5
--	---

(To be continued.)

DR. SERVICE'S APPLICATION FOR RETIREMENT.—The petition of Veterinarian S. W. Service, 10th cavalry, for retirement has been commended by the officers who have forwarded it to Washington. It was transmitted to Congress by the Secretary of War with the following explanatory report: "War Department, Office of the Chief of Staff, Washington, February 15, 1904. Sir: I have the honor to submit herewith the petition of Dr. Samuel W. Service, veterinarian, 10th United States cavalry, "to be retired under such provisions as may be meet and proper for and on account of long and faithful service, and on account of old age." He also asks that he may be placed upon the retired list of lieutenants in the Army. *I can not recommend legislation establishing a precedent for placing on the retired list of commissioned officers of the Army persons who never held commissions therein*, but I think that the record of Dr. Service entitles him to consideration at the hands of the government, and I therefore inclose draft of a bill providing for his retirement from active service with pay at the rate of \$65 per month. He served for a time during the civil war in a Michigan regiment of volunteers, and has served continuously as a veterinary surgeon *since July 4, 1871*. He has now the pay and allowances of a second lieutenant of cavalry, *but not the rank*. The rate of pay suggested is less than half he now receives. He is over 70 years of age and has become unfit for active service, both on account of age and failing eyesight, and will necessarily have to be discharged as unfit for further duty. I regard the special legislation recommended *as only a fitting recognition of this man's long service*, and if enacted it will afford a modest provision for him during the few remaining years of his old age. If he had been given the rank as well as the pay and allowances of a second lieutenant of cavalry, he would be entitled to retirement on 75 per cent. of the pay of that grade, which would be a considerably larger sum than is given in the bill submitted. Very respectfully, ADNA R. CHAFFEE, *Lieutenant General, Chief of Staff.*"

"THE war question is a very grave element here in the Far East, and we are looking forward to a chance to go to China. All are eager to go, since it would break the monotony of garrison duty, which gets very tiresome here in the Philippines. At present there are no widespread epizootics of man or animals."—(*Charles H. Jewell, Vet. 15th Cavalry, Manila, P. I.*)

COLLEGE COMMENCEMENTS.

KANSAS CITY VETERINARY COLLEGE.

The thirteenth annual commencement exercises of the Kansas City Veterinary College were held in the college auditorium on Tuesday evening, March 15th. The music for the occasion was furnished entirely by the students and their friends. The faculty address, given by the Hon. A. B. Duncan, of St. Joseph, Missouri, was a happy one in many particulars. His manner of presentation was pleasing, the verbal illustration quite to the point, and the words of encouragement to the veterinarian were strong. The large number of ladies in attendance was indicative of the esteem in which the gentler sex held the profession into which the graduates were ushered on this occasion.

The degree of Doctor of Veterinary Science was conferred upon the following:—Alfred L. Bailey, Jesse C. Bowman, Larkin S. Campbell, Fred Cater, B. Carl Davis, Robert Dill, Otis H. Downs, John Eagle, Charles Eastman, Abraham J. Farley, George M. Fox, William A. Fry, Guy C. Furnish, Marvin Gregory, L. Charles Henderson, William J. Hossley, Logan B. Buff, Fred E. Johnson, Thomas A. Jones, Albert T. Kinsley, Adam T. Knowles, William B. McAlester, Hugh M. McConnell, Walter C. McPherson, Thomas A. Mabie, Clarence D. Meredith, Ahijah J. Munn, Orrin W. Noyes, Will R. O'Neal, Marlain A. Peck, Sanford A. Peck, Sterling M. Reagan, Maurice D. Strong, Zachary Veldhuis, D. V. S., Spencer E. Watkins, William W. Wilson, Clarence J. Young, Henry C. Babcock, V. S. M. D.

Certificates of proficiency were granted to the following as evidence of completion of the special course given by this college:—Frank T. Allen, D. V. S.; Edward T. Frank, M. D. C.; Wm. J. Guilfoil, D. V. S.; John G. Veldhuis, M. D.; Walter Warren, V. S.

The following is the programme of commencement exercises: Invocation, Rev. Jas. M. Cromer; Piano Solo, Fifth Nocturne, Miss Stella Ruth; Song, Selected, Dr. F. W. Weston; Faculty Address, Hon. A. B. Duncan; Presentation of Diplomas, Dr. R. C. Moore; Class Response, Dr. Orrin W. Noyes; Song, Mr. T. Byron Cracroft; Song, Dr. R. Fred Eagle; Piano Duet, Mignon, Misses Della Kahn, Belle Stewart.

McKILLIP VETERINARY COLLEGE.

The annual commencement exercises of this school were

held March 25th in Handel Hall, Chicago, Ill., President Mc-Killip conferring the degrees and Dr. W. A. Evans delivering the address of the evening. The programme included addresses from several members of the graduating class, interspersed with music. A class of twenty-eight received their degrees, the largest in the history of the college. Following the exercises was a banquet at the Sherman House, given in honor of the Class of 1904, Prof. W. S. Harpole acting as toastmaster. Among those responding to toasts were Prof. E. M. Reading, Dr. H. M. Schultz, C. F. Colson and J. F. Howes. A very profitable and enjoyable evening was passed by the large number present, and the faculty was highly elated at the successful closing of the most successful year in the history of the college. Not only was the attendance the largest, but the quality of the students has been far above the average. While these exercises virtually closed the college year, the night school still continues until some time in June, the college having established a night school last year, where the first two years' work of the course may be done in the evening, the last year in the day course.

INDIANA VETERINARY COLLEGE.

At the closing exercises of this college, which took place March 31, in the auditorium of the German House, Indianapolis, Indiana, there was a large attendance of the friends of the college and graduates, and an excellent programme was rendered, consisting of music and addresses, that by President George H. Roberts being specially well appreciated by the class and audience. The following twenty-four gentlemen received diplomas: August Henry Albershardt and Harry Daniel Albersmeier, Indianapolis; Charles William Black, Judson, Ind.; Oscar Milo Catey, Carlos City, Ind.; Jarvis Scally Crabtree, Paris, Ill.; Lawrence Claton Daughtrey, Van Buren, Ind.; George Clem Emick, Linn Grove, Ind.; Jonathan Elsworth Gibson, Jamestown, Ind.; John Rudolph Lair, Connersville, Ind.; Ernest Layne, Crown City, O.; Paul S. Lindley, Paoli, Ind.; Daniel R. Leap, Sharpsville, Ind.; Austin Emory Martin, Nelsonville, O.; Alexander Lincoln Marvel, Owensville, Ind.; Charles Edward Nierste, Sandborn, Ind.; Ziba Allen Redding, Delphi, Ind.; Charles Walter Secoy, Athens, O.; William Arthur Scott, Baxter Springs, Kan.; Samuel Springer, Hunters, Ind.; Albert Wynne Stubbs, Indianapolis; William Asa Skinner, Indianapolis; Loarn Clark Rider, Kenton, O.; Dewey Elliott Westmorland, Pennville, Ind.

ONTARIO VETERINARY COLLEGE.

The closing exercises of this college took place March 31, at the college building, Toronto, Ontario, when addresses were made by the Lieutenant-Governor, Principal Smith, and others. The gold medal offered by the Ontario Veterinary Association was awarded to Theodore A. Girling, of Manitoba. Diplomas were awarded to the following: Irving S. Alford, Sibley, Ill.; Jed. Badgley, Tampico, Ill.; Trueman Bailey, Rosemont, Ont.; Ernest A. Beavers, Perrysville, Ohio; Lester D. Bettinger, Chittenango, N. Y.; James A. Black, Chesley; Charles L. Boissiere, Port of Spain, Trinidad; George R. Brewster, Sunderland; Linus W. Burr, Cameron, Mo.; Duncan C. Bell, Portage la Prairie; Absalom B. Campbell, Fergus; Fred. T. Cheney, Lindsay, N. B.; Fred. F. Consaul, Buffalo, N. Y.; Wm. A. Coyner, Staunton, Va.; Leroy L. Cress, Clinton, Mo.; George A. Cunningham, Brussels; Alexander Currie, Elmvale; A. R. Colman, jun., Jarvis; J. P. Chisholm, Lisbon, N. Dak.; Charles C. Dauber, Attica, N. Y.; Richard W. Deats, Bardstown, Ky.; John A. Dilley, Aledo, Ill.; Robert R. Donaldson, Argyle, Minn.; Wilbert S. Eddy, Dubuque, Iowa; George D. Fisher, Grandin, N. Dak.; J. Williamson Frank, Victoria, B. C.; Theodore A. Girling, Wawanesa; Charles W. Grantham, Ladoga, Ind.; Ralph C. Harris, Jackson, Mich.; Archibald Howden, Lewiston Junction, Maine; George A. Johnston, Lexington, Neb.; Herbert R. Jones, Newburg, N. Y.; Chas. J. Korinck, Cottage Grove, Oregon; Theodore F. Krey, Brooklyn, N. Y.; E. G. Lathrop, Weston, Ohio; Andrew A. Lockhart, Rapid City, Man.; Ira B. Ludington, Holley, N. Y.; Daniel A. McArthur, Lauder, Man.; Clarence L. McConkey, Tedrow, Ohio; Clarence McDowell, Watertown, S. Dak.; Robert McKenzie, Jarvis; Henry E. Maguire, Waterloo, P. Q.; Alex. M. Mair, Seagrave; Harvey G. Malloy, Benmiller; Walter Martin, Pocohontas, Mo.; Chas. C. Mix, New Berlin, N. Y.; Albert A. Munn, Cambridge, Neb.; Samuel Murray, Dauphin; Samuel T. P. Nichol, Virden; Fred. D. Orr, Caro, Mich.; Edwin J. Peck, Buffalo, N. Y.; Clark A. Philps, Wallaceburg; Olaf J. Reed, Lion's Head; Samuel Robinson, Brandon; Thomas Scrivener, Edgeley; A. B. Sexsmith, Sidney, N. Y.; Ashley C. Spencer, Fowlerville, Mich.; Curtis J. Spring, Millersberg, Ohio; William P. Stuart, Rapid City; William Symes, Hutchinson, Kansas; Richmond Tiedt, Argyle, Minn.; Andrew M. Van Cleaf, Bloomfield; William W. Warnock, Aledo, Ill.; Clinton B. Weagly, Cavetown, Maryland; Oral W. Winters, Arthur, Ill.; T. Z. Woods, Winnipeg; Albert L. Wright, Columbus, Wis.; W. Wade Zirkle, Forestville, Va.

NEW JERSEY LEGISLATIVE NEWS.

We are indebted to the Chairman of the Legislative Committee of the Veterinary Medical Association of New Jersey for the subjoined items of news from the New Jersey halls of legislation. Bills, as follows, of interest and concern to the veterinary profession have passed both houses of the New Jersey Legislature, been approved by the Governor and are placed upon the statute books of that State:—

Senate No. 56, An Act to regulate the sale of cocaine in any form: "No person shall sell, furnish or give away any cocaine, or any patent or proprietary remedy containing cocaine, except upon the prescription of a registered practicing physician, or of a dentist, or of a *veterinarian*; nor shall any such prescription be refilled; nor shall any physician, dentist or *veterinarian* prescribe cocaine, or any patent or proprietary remedy containing cocaine, for any person known to such physician, dentist or *veterinarian* to be an habitual user of cocaine." Penalty, fine not more than \$100, or imprisonment for three months, or both at the discretion of the court.

Assembly No. 267 makes it unlawful to offer for public sale any maimed, sick, diseased, infirm or disabled animal, or any animal incapacitated for use by old age. Penalty, fine not exceeding \$100 and costs.

Senate No. 178 provides that whenever any person shall keep cows for the production of milk in a crowded or unhealthy place or condition, or feed any cows kept for the production of milk, on swill or any substance in a state of putrefaction or rotteness, or on any substance of an unwholesome nature, or on any substance that may produce disease or unwholesome milk; or who shall sell or distribute, or offer to sell or distribute, or have in possession with intent to sell or distribute any milk which is the produce of cows so kept or fed, then it shall be lawful for the State Board of Health to file a bill in the Court of Chancery in the name of the State, on the relation of such board, for an injunction to prohibit the keeping of cows for the production of milk in such crowded or unhealthy place or condition, or the feeding of cows on swill or any substance in a state of putrefaction or rotteness, or any substance of an unwholesome nature, or on any food or substance that may produce disease or unwholesome milk, or the continuance of the sale, distribution or transportation of milk so kept, as the case

may be, and for such other or further relief in the premises as the Court of Chancery shall deem proper.

Senate No. 143 authorizes governing bodies of municipalities to regulate or prohibit the distribution of sample packages of medicines or preparations represented to cure ailments or diseases of the body or mind. Penalty, \$50 fine.

Assembly No. 298 gives power to the Board of Health of any municipality to designate from among its sanitary inspectors one or more inspectors who shall be known as inspector or inspectors of foods and drugs of such municipality, and whose duties shall be, besides the duties of a sanitary inspector in such municipality, to aid in the enforcement of an act entitled "An Act to secure the purity of foods, beverages, confectionery, condiments, drugs and medicines, and to prevent deception in the distribution and sales thereof," approved March 21, 1901.

Senate No. 16 is an act providing for a publication setting forth the industrial and agricultural advantages of the State of New Jersey.

From the foregoing and from other information at hand, it is evident that the Veterinary Medical Association of New Jersey through its Committee on Legislation, is a factor that has to be reckoned with at Trenton. There is a lesson in this that might well be learned by the profession in a number of other States.

CORRESPONDENCE.

NASO-ÆSOPHAGEAL INTUBATION DESCRIBED BY DR. GRIBBLE
IN 1890.

WASHINGTON C. H., OHIO, April 12, 1904.

Editors American Veterinary Review:

DEAR SIR:—In your issue for March (which I was somewhat late in reading) I noticed that Dr. Geo. W. Pope had demonstrated naso-æsoophageal intubation before the Passaic County Veterinary Association; and also a letter from Dr. J. M. Phillips in reference to the same operation, and its demonstration at certain veterinary colleges. While these demonstrations were recent, and the language used by these gentlemen, especially one of them, such as to lead one to presume that the operation is new, allow me to say that, in the blissful ignorance of my early practice, naso-æsoophageal intubation presented itself to me when the occasion seemed to demand it, without any

special effort or forethought (simply an easy way to reach the stomach), and I had presumed it occurred to all others the same. This, and its simplicity, were sufficient explanation as to why it had never been shown by my *alma mater*; but, now that the matter has been called to my attention, I cannot recollect having even heard it talked about there. In Vol. XIV. of the AMERICAN VETERINARY REVIEW you will find that July 16, 1890, nearly fourteen years ago, I read a paper before the Ohio State Veterinary Association, describing a treatment for thoracic choke with water, injection syringe and a long small rubber tube. The method of using the water and syringe I fully explained, but wrote of passing the tube just as one would any operation he presumed his hearers knew all about.

The discussion started *pro* and *con* as to the dangers and difficulties of using the probang, until one asked how it was possible to pass such a long, limber tube into a struggling horse's throat without its being chewed up. This led me to say, that I passed it through the nostrils, and described how. If right-handed stand to the right of the horse's head, and, with left hand, lift the nose as high as possible, slowly and carefully passing the tube up the right nostril. Horses rarely fight much against it; one can do it alone. I explained its ease and benefits in stomach bloating, etc.; in fact was quite enthusiastic. The discussion, however, was very limited, in fact dull, due, I then thought, to my having selected an almost threadbare subject; but, in the light of the March REVIEW, and remembering that this paper was fourteen years ago, I now feel sure that the apparent lack of interest was kind charity: none of my hearers had performed the operation themselves, neither did they believe the new member telling about it ever had. The tube I then used was common three-eighths white rubber, with the rounded end of a catheter fitted to it; since then, I have one exactly like a male (equine) catheter, linen, only so very much longer; this, placed in warm water a few moments, is ready for use.

WM. H. GRIBBLE.

INTRAVENOUS INJECTIONS OF NORMAL SALT SOLUTION IN
PURPURA HÆMORRHAGICA.

ST. LOUIS, MO., March 21, 1904.

Editors American Veterinary Review:

DEAR SIRS:—I wish to call the attention of the profession to the treatment of purpura hæmorrhagica by the intravenous

injection of a normal saline solution. This form of treatment may not be new to some, but as it is not mentioned in our textbooks, and has given unusually good results in my practice for several years, it may be of sufficient interest to cause others to give it a trial.

I will not enter into a discussion as to its physiological actions, but leave it to others more fitted to delve into that part of the question.

The method of introduction that has proved simple is by an ordinary transfusion apparatus, using 80 grains sodium chloride and one quart distilled water. This is introduced into the jugular vein. In only two or three cases have I had to repeat it, and if so I wait until the second day. I also give turpentine, $\frac{1}{2}$ i, and raw linseed oil, Oi-ij. This in a majority of cases would be impossible to do in the old way.

I use the stomach tube (for which I claim to be the originator) and a funnel to carry it to the stomach with absolute safety, and very little distress to the patient.

Would be pleased to correspond with anyone needing more information, and would like to hear of results. I will say in conclusion that my recoveries were in less than one-half the time of previous treatment, the swellings disappearing in a few days.

Yours respectfully, H. B. PIATT, V. S.,
3618 North Ninth Street.

DR. WYMAN WANTS A TEST OF SWINE FEVER ANTITOXIN.

PROSPECT, OHIO, APRIL 20, 1904.

Editors American Veterinary Review:

DEAR SIRs:—A few months ago you kindly granted me space in discussing Bulletin 41 of the Bureau of Animal Industry. I also appealed to the American Veterinary Medical Association, asking them to make a public test as regards the virtues or inefficiency of the De Vaux antitoxin. So far my plea has brought negative results. Since the meeting of the national body of veterinarians takes place at St. Louis, it seems to me that it would be the proper place for such a test. All veterinarians are either directly or indirectly interested in preventive measures as regards swine fever, and an exhaustive test is called for. The latest publication of the Bureau of Animal Industry in regard to swine fever is, no doubt, taxing the powers of deglutition of a great many. Profs. Moore, Peters, Reynolds, and others could suggest the details of such a test. Would not these gentlemen sacrifice some of their time to outline a test through the REVIEW?

W. E. A. WYMAN.

BIBLIOGRAPHY.

TREATISE OF TOPOGRAPHICAL ANATOMY OF DOMESTIC ANIMALS. (Trattato di anatomia topografica dei mammiferi domestica). By Prof. Teresio Mongiardino, of the Veterinary School of Turino.

The necessity of a thorough knowledge of surgical anatomy is well known, and on that account any work on the subject properly presented will also be welcome. It is therefore with this feeling that we must accept the treatise of Dr. Mongiardino, which is well written and well presented to impress the reader.

Covering some 320 pages of reading material, it is illustrated by a number of plates, several of which are colored. These are probably not as correct as the anatomist would wish them, and if my memory serves me right are reproductions of those which I believe are found in the work of Seisering. But with that exception the author deserves compliments for the manner in which he has divided his work.

The whole subject is divided into chapters—head, neck, trunk and extremities; each of these is divided into regions and into sub-regions when they are too extensive or complicated. Each of the regions or sub-regions is then taken up and studied under a uniform plan, taking the horse as type; the same condition being afterwards considered for the other domestic animals in a rather short manner. The index of the plates is rather a good addition to the work.

A. L.

MALADIE DU COIT IN IOWA.—*Webster City, Iowa, March 25.*—Dr. Paul O. Koto, State Veterinarian of Des Moines, has discovered an outbreak of maladie du coit among the horses in Van Buren County. The disease was reported from near Birmingham. Members of the State Board of Veterinarians examined the animals afflicted and pronounced them clearly affected with the maladie du coit. Dr. Koto says the symptoms are unmistakable. While there is no disguising the danger in the outbreak of the disease, Dr. Koto and his staff believe it will be stamped out by the State and national authorities without jeopardizing the horse industry of Iowa if prompt attention is given it. The national authorities, however, will have to lend their aid if this be done, as the State is handicapped for want of funds and the disease is a most dangerous one, not only to Iowa, but to the whole of the horse raising district of the country. Dr. Koto has written the Bureau of Animal Industry in Washington reciting the circumstances.—(*Chicago Herald.*)

SOCIETY MEETINGS.

PENNSYLVANIA STATE VETERINARY MEDICAL ASSOCIATION.*

The annual meeting was held in Room C, Odd Fellows' Temple, Philadelphia, March 8 and 9. The first day's session was called to order at 10 A. M. by President E. M. Ranck, who came on from his new home in Natchez, Miss., for the purpose of fulfilling his obligations to the Association. Dispensing with the reading of the minutes of the previous meeting and the roll-call, the President announced that he would deliver his address later in the meeting.

The election of officers for the ensuing year was taken up and the Chair appointed Drs. Pearson, Hoskins and Ridge to nominate candidates for the various offices. This committee placed in nomination for President, Drs. Charles T. Goentner, F. F. Hoffman and Otto Noack. For Vice-Presidents (three to be chosen), Drs. J. D. Houldsworth, Thomas B. Raynor, F. F. Hoffman, H. P. Jackson, J. B. Irons and A. O. Cawley. For Corresponding Secretary, Dr. C. J. Marshall. For Recording Secretary, Dr. B. T. Woodward. For Treasurer, Dr. Francis Bridge. For Board of Trustees (five to be chosen), J. C. McNeil, H. B. Cox, A. W. Weir, Jacob Helmer, Leonard Pearson, Wm. H. Ridge, W. Horace Hoskins and W. L. Rhoads. The result of the balloting showed the following to have been elected:

President—Dr. Otto G. Noack.

Vice-Presidents—Dr. Thomas B. Raynor.

—Dr. J. B. Irons.

—Dr. H. P. Jackson.

Corresponding Secretary—Dr. C. J. Marshall.

Recording Secretary—Dr. B. T. Woodward.

Treasurer—Dr. Francis Bridge.

Board of Trustees—Drs. Leonard Pearson, J. C. McNeil, W. Horace Hoskins, Wm. H. Ridge and Jacob Helmer.

Applications for membership were offered by Drs. John W. Montague and A. J. McCloskey, and they were unanimously elected.

The Secretary submitted his report, which was replete with sound suggestions and accurate data. This was referred to the Trustees to consider the suggestions.

* Summarized from the stenographer's notes of the proceedings by Roscoe R. Bell.

The H. K. Mulford Co. forwarded an invitation to the members to visit their antitoxin and vaccine plant at Glenolden.

Letters were read from Drs. James B. Raynor, of West Chester, and H. B. Felton, former Recording Secretary, who was forced to remove to Colorado on account of the ill-health of his wife.

An invitation from Mr. Gill, of Haddonfield, N. J., to visit his model farm, where a first-class dairy of Guernsey cows is maintained, was read.

The reports of delegates to various associations were called for.

Dr. Hoskins, delegate to the American Veterinary Medical Association, gave a lengthy description of the Ottawa meeting, paying a high tribute to the hospitality of the Canadian veterinarians, the officials of the city of Ottawa, and the people of the Dominion in general, concluding that from every point of view it was the largest, most valuable and representative gathering of veterinarians ever held on the Continent.

Dr. Pearson reported that he had attended the New Jersey State Association meeting at Trenton, and that it was a very successful and valuable one, there being a number of prominent State officials present, who took an active part in the deliberations; that the programme was very full; so full, in fact, that it left no time for discussions.

No delegate had attended the annual meeting of the New York State Veterinary Medical Society.

Dr. Bridge reported that his attendance upon the Keystone Association meetings convinced him that it was doing good work, and that the special milk meeting recently held, while not so generally attended by invited physicians and other outside interested gentlemen, was nevertheless successful as an entering wedge.

Dr. Otto G. Noack reported that the Schuylkill Valley Association is working hard with a small membership, and urged a better attendance of delegates from the State and other associations.

Dr. McGee and Dr. McNeil reported that the Western Pennsylvania Association was progressing nicely for a young organization.

At 1.10 P. M. the Association adjourned until 7 in the evening, many of the members accepting the invitation to visit the Haddon Farm, where they were much interested in the fine cat-

tle and Mr. Gill's methods of producing and handling certified milk.

The evening was devoted to a banquet given by the members in honor of Dr. D. E. Salmon, Chief of the Bureau of Animal Industry. About 75 were in attendance, and the evening was pleasantly spent.

Second Day.—President Ranck called the meeting to order at 10.20, and introduced Drs. Roscoe R. Bell, President of the A. V. M. A., and E. B. Ackerman, Veterinarian to the Department of Health, of Brooklyn, N. Y., each of whom graciously acknowledged the courtesy extended to them.

Dr. Ridge, from the Committee on Legislation, had nothing to report, and the Treasurer was not present to respond when his report was called for. The Army Legislation Committee and the Committee on Sanitary Science and Police were not ready to report when called upon.

Dr. Woodward, Chairman of the Committee on Intelligence and Education, rendered a carefully prepared report, dealing principally with a comparison of the various veterinary colleges of America, showing the great variance in the length of the courses and the subjects taught. Dr. Noack offered his report from the same committee, paying tributes to two distinguished foreign veterinarians who have recently died (Nocard and Dieckerhoff). He further reviewed the experiments being conducted by Von Behring in Europe and Pearson in Pennsylvania to immunize cattle against tuberculosis. He also gave his impressions of the Ottawa meeting of the A. V. M. A., chiefly the valuable section of the programme carried out at Pine Grove Farm. He thought that this country should handsomely support ten monthly journals, instead of one, as at present.

One of the most elaborate and best reports we have ever listened to was that of Chairman S. J. J. Harger, of the Committee on Animal Husbandry. It was quite lengthy, filled full of intensely interesting and instructive facts, and engaged the closest attention of every one present. The REVIEW earnestly hopes that it may have the privilege of publishing it in full. We will not therefore attempt to synopsise it.

It was discussed at considerable length by Hon. M. B. Critchfield, Secretary of the State Board of Agriculture, who gave an interesting talk on various phases of animal husbandry. Dr. Jobson went into a discussion of the breeds of cattle, and Dr. Harger showed his great familiarity with his subject by entering into the details of Dr. Jobson's contention. Dr. Bell was called

upon to give his experience with the feeding of molasses to horses, as the subject was referred to in Dr. Harger's report. He gave a history of the utilization of this product as a food for animals, and the wonderful results which have been accomplished through it in New York and Brooklyn, especially its effects as a dietetic in horses affected with indigestion, and referred to its beneficial effects in horses suffering from heaves. He also thought that it did much in preventing attacks of azoturia, though his observations along this line had not been sufficiently extensive to permit of a statement to that effect. He asked those present to note the frequency or infrequency of azoturia in stables feeding molasses to their horses.

Dr. M. E. Conard reported verbally for the Committee of Milk Inspection that the public is recognizing the necessity of systematic inspection, but that before sufficiently high standards can be established and enforced it is necessary to educate both the producer and the consumer, and this can best be done by veterinarians. Dr. George B. Jobson also reported verbally, giving a history of milk inspection in Oil City.

The Committee on Meat Inspection failed to report, as did also the Committees on Sanitary Science and Police and Army Legislation.

Reports were read by Secretaries from the following counties: Adams, Beaver, Crawford, Lebanon, Luzerne, Schuylkill and Washington, while verbal reports were made for Chester, Fayette, Venango and Wyoming Counties.

The Treasurer's report showed the finances of the Association in a very flourishing condition.

Adjournment for luncheon at 1.20 P. M.

Afternoon Session, Second Day.—Called to order at 2.20 p. m. Dr. M. Moriarity presented a specimen of osteoporosis in a pony filly. Dr. Wm. Dougherty, of Baltimore, Md., was called upon as one who had made a study of this disease, and he gave considerable data to prove that fertilizers are largely responsible in the production of the affection, particularly where horses are pastured on fertilized land. Dr. Kooker instanced a carload of horses that came from a section of the West where fertilizers are never used, and in six years more than three-fourths of them were dead of osteoporosis. Dr. Eves spoke of its great prevalence in his practice, and told of a certain brewery stable losing a great many horses, and that the feed was purchased any and everywhere. Finally they isolated the diseased from the healthy ones. Dr. Mahaffy, who has charge of that

stable now, said that by following up that plan with even suspicious cases the disease has been gotten rid of. Dr. Pearson is of decided opinion that osteoporosis is an infectious disease, and he gave credit to Dr. J. C. McNeil, of Pittsburgh, as the first man he had known to propound this theory. Dr. Hoskins cited an instance confirmatory of the infectiousness of the disease. Dr. Schrieber also supported this theory with clinical facts. Dr. Conard told of osteoporotic horses sent from the city to a region where much fertilizer is used and the animals recovered. Secretary Critchfield asked if fertilizers made from the bones of animals dead of osteoporosis and other infectious diseases might not possess active properties in disseminating the diseases. Dr. Eves replied that in manufacturing the fertilizers the bones were put through such a process of boiling that would effectually destroy all infection. Dr. Pearson supported this contention, and described German processes of utilizing the carcasses of animals affected with infectious diseases.

Dr. W. H. Ridge then presented his paper on "The Treatment of Parturient Paresis," which will be found in full elsewhere in this number of the REVIEW. It was discussed by Drs. Pearson, Butterfield and Neale. The suggestion of Dr. Neale is an especially important one as explanatory of the excellent results obtained from the injection of oxygen into the udder. The Doctor suggested that the germ proliferating the toxine in the udder is an anærobe, and that the inflation of the organ with oxygen effectually destroys it. Dr. Pearson thought this the probable explanation of the remarkable results obtained.

Dr. H. D. Martien exhibited a collie dog owned by him which possessed two penises, two bladders and two tails. Dr. Harger gave an interesting talk on the monstrosity, especially as to its early embryonal development.

Dr. E. Stanton Muir read a paper upon "Tallianine," narrating some wonderful results obtained from this new drug in the treatment of various lung and septic diseases. It was discussed by Drs. Bell and Ackerman.

Dr. Hurley, a delegate from the Veterinary Medical Association of New Jersey, was recognized by the Chair, and tendered the courtesies of the floor, acknowledging which the Doctor spoke in enthusiastic terms of his own association and the advantages of interattendance with the two bodies. He also referred to the subject of osteoporosis and agreed with the former speakers as to its infectious nature.

Dr. John W. Adams then gave an interesting and instruc-

tive address on "Contractures of Joints of Horses' Legs," which was replete with sound conclusions and practical information.

The hour being late Dr. Leonard Pearson asked that he be permitted to drop his announced subject of glanders in order that he might say something about a commission which the Governor of Pennsylvania has recently appointed to formulate rules and regulations governing the disposition of the carcasses of tuberculous animals. Under the rules of the State Live Stock Sanitary Board and the Federal Bureau of Animal Industry the custom has been to condemn and destroy the carcasses of those animals which were affected with generalized or extensive tuberculosis; but no definition of these terms exists in the regulations, so that there is nothing to guide inspectors as to where to draw the line between the two conditions. The Commission, which is composed of sanitarians, pathologists, bacteriologists and veterinarians, has already held an organization meeting at Harrisburg, and have formed subcommittees to study the various phases of the question, and it is expected that when their work is completed it will be the most thorough and comprehensive exposition of the subject extant.

Chairman Pearson, of the Board of Trustees, then read their recommendations, which were acted upon *seriatim* and in accordance with their recommendations. They were as follows: That Dr. John J. Repp be transferred from the list of corresponding members to the list of active members; that two of the old members, who have been ill for a long time, have their dues remitted; that a number of members in arrears be notified that, unless their remittances be received within thirty days, they will be dropped from the roll; that Dr. J. M. Carter, of Philadelphia, and Dr. J. R. Mahaffy, of Wilmington, Del., be summoned before the board to answer charges of violation of the Code of Ethics; that the proposed change in the By-laws relative to election of officers be unfavorably considered, but in its place the Board of Censors shall each year submit a list of candidates for the several offices of the Association; that there be a resuscitation of the Association of State Veterinary Examining Boards, so that the question of more uniform laws and regulations of said boards, providing for interchangeable licenses, may be carried out; that, at our annual meetings, the officers of the American and all State Associations be invited to attend, that our work may take on a more advanced character so far as interstate questions of veterinary medicine are concerned; approving the action of the Governor in appointing a commission

of sanitarians to formulate a code of rules for the guidance of meat inspectors in disposing of the carcasses of animals afflicted with tuberculosis; that \$20 be contributed by the Association to the Nocard Monument Fund; that \$100 be set aside for the publication of the proceedings of the Association annually.

Dr. Hoskins referred to the excellent work performed by Secretary Marshall during the past year, and its arduous character, and moved that \$50 be appropriated as a slight token of appreciation, which was unanimously carried. The Secretary modestly protested, but finally accepted the gift with thanks.

The Secretary repeated his request to the members to forward any duplicate magazine numbers which they might have, so that the files of the *REVIEW* and *Journal* could be completed and placed in the library of the new veterinary building of the University when completed.

Dr. Schreiber then caught the Chair's attention and said:

Mr. President and Gentlemen: The veterinarians of the State of Pennsylvania appreciate worth in a man. We have among us a man who, by his untiring zeal and energy, has done more to elevate the profession of veterinary medicine than *any* of his predecessors. His work has not only been recognized nationally but has achieved world-wide fame. Through his perseverance and honest scientific work many knotty problems have been solved for us. Several years ago it was our good fortune to see him elevated to the highest veterinary position in our State, since which time our profession is gradually assuming that high scientific plane which is bound to be the outcome when led by such an able leader. Never lagging, always onward, until now we have established in our State The State Live Stock Sanitary Board, whose rules and regulations make it possible to study disease which might be a menace to the well-being of the animals or to the human beings around them. Look back to the years past and compare them to what now exists. Every village and hamlet in our glorious State is now protected, from both a medical and commercial standpoint, through the great work of our leader, Dr. Leonard Pearson. Dr. Pearson, it is one of the pleasures of my life to be the mouth-piece of the veterinarians of our State, who present to you this slight token of their regard, firstly as a man, and secondly as our most able veterinarian.*

Dr. Pearson: Mr. President, I am sure I have never been so surprised in my life before. I feel so at loss for words to express my feelings, for I had not the slightest shadow of a

* A beautiful elaborate silver service.

thought that anything of this sort was to take place. If I had I do not know that I could have prepared anything to have said that would adequately express my appreciation. It has been a great pleasure to me to do the work that I have done as State Veterinarian and it has been a pleasure because it has brought me into such pleasant contact and such pleasant relations with my colleagues throughout the State. If anything has been accomplished in Pennsylvania that is at all notable in the way of repressing diseases of animals, it is due, not to any individual, but it is due to the united efforts of Pennsylvania veterinarians. It has always been a matter of pride to me that the veterinarians of Pennsylvania have acted as a solid body. There has always been the greatest unity and cordiality in the veterinary profession in this State. We have never had to lose any of our energy or any of our time in fighting each other. We have lost no influence by being divided into factions and so it is the whole profession of the State that deserves any credit that is to be bestowed. I don't know what you have there, but I am sure that it is very fine. (*Dr. Schreiber*: You might come over and look at it.)

Dr. Pearson: I shall always cherish it as a token of friendship and fellowship from my colleagues and I am sure that a man cannot be honored more than by those with whom he is in daily contact. I thank you very much, gentlemen, and I wish that I could better express my feelings at this time.

President: The next on the programme is to seat new officers. Dr. Noack is our coming President. He asked me to thank you for the honor conferred on him as he was unable to stay, having to take the 6 o'clock train for Reading.

I will ask the Vice-Presidents present to come forward.

President: I now declare the meeting of the Pennsylvania State Veterinary Medical Association adjourned.

AMERICAN VETERINARY MEDICAL ASSOCIATION.

Dr. Chester Miller, Chairman of the Committee of Arrangements for the St. Louis meeting of this Association, which takes place Aug. 16 to 19, has organized his committee by the selection of Dr. J. J. Brougham, B. A. I., as Secretary, and Dr. Crowley treasurer. The remainder of the local committee consists of Drs. W. F. Heyde, J. B. Clancy, Ray J. Stancliff, W. H. Meador, Joseph E. King, J. M. Watson, and R. A. Kammerer. A recent letter from Dr. Miller states that matters are shaping themselves for a splendid meeting, and we hope to be

able to present our readers with an outline of the programme in the June number.

MICHIGAN STATE VETERINARY MEDICAL ASSOCIATION.

REPORT OF COMMITTEE ON INTELLIGENCE AND EDUCATION.

Mr. President and Gentlemen :

As Chairman of the Committee on Intelligence and Education, let me at this time ask your indulgence, let me seek your commiseration, let me offer an apology for any sins of omission or commission that I may be guilty of in making this report.

When President Gohn honored me with the chairmanship of this committee, I had a premonition or feeling that he expected me to do something. I thereupon resolved that I would do my best. How easy it is to make resolutions, and how prone we are to forget and neglect them. Dr. Gohn appointed as my colleagues on the committee, Drs. J. Drury and R. W. McDonald. I thought at the time, with those leading lights of the profession as my counselors and assistants, we could produce a good report—one that would surpass any report heretofore made, and, judging by the length and character of reports usually made to this Association on Intelligence and Education, that appeared easy at the time. I resolved further that I would make notes during the entire year of any subject or matters that might be of interest. Well, the months rolled by, and, while I occasionally thought of my resolution and of my duty to the Association, it ended in thinking. My mind was occupied in other ways, in the pursuit of the almighty dollar, wherewith to meet my obligations, which obligations are so strenuous in this hustling age of the world. The problem of how to keep the "wolf from the door" is evidently uppermost in many minds. But, gentlemen, there is a selfish side to our natures. There must be! Do we spend all our moments in pursuit of self? Do we spend all our days in administering to and alleviating the pains and diseased conditions of our dumb friends? It cannot be so, gentlemen, or else would not our coffers overflow? Still, how very much occupied veterinarians are, to hear them tell it! So busy, in fact, that they cannot spare a few days or even hours for the benefit and welfare of the Association, and through it the profession at large. Would we not be more entitled to commendation if we communicated the ripened results of our experiences

to our fellow practitioners? My conscience often pricks me when I read the quotation that always appears in the *AMERICAN VETERINARY REVIEW*, under the heading, "Reports of Cases." You have seen it. It reads thus: "Careful observation makes a skillful practitioner, but his skill dies with him. By recording his observations he adds to the knowledge of his profession, and assists by his facts in building up the solid edifice of pathological science." I dread to think, gentlemen, how much I would miss the *REVIEW* in case it should cease to come. What a well spring of "Intelligence and Education" it is. It comes like a ray of sunshine into the too often cloudy atmosphere of our lives. The thought comes to me sometimes, that I may be a failure; that I am becoming a "has been." In this age of advancement, we must be up-to-date in our methods; we must be conversant with the new ideas, whether we apply them or not. Some of them are improvements on the old; others, I fear, are not.

Recreation has been another factor that may have affected my resolution in regard to this committee work. For the past twenty years I have devoted my time very assiduously to business, always hoping a time would come when I might indulge in or gratify my very great liking for hunting and fishing. So I have passed many pleasant hours and days at the trap, and on the water, trying to lure the wiley bass and other members of the finny tribe, and later on followed my faithful dog after quail and partridge, and still later on with hound, pursued the lively cotton-tail. This pastime has made life appear the more worth living. This, then, is the selfish side of my life—my recreation. But I feel that it is legitimate; that I am entitled to it. I do not expect to pass through this world but once. While I hunt and fish, other veterinarians may seek pleasures in a different way; and, while those pleasures are manly and legitimate, they are to be commended.

But, in addition to the business and pleasures of our lives, we should not forget the science or art by means of which we secure a livelihood.

While the knowledge we possess is the result of study, research and experience, what would we have done without the text-books and writings of veterinarians of by-gone days? Just think for a moment, if you please, of the stupendous works of Chauveau, Strangeway, Williams, Fleming, Dun, and others, and in our own country to-day we have men who are rearing monuments that will keep their memories green for ages to

come. What a debt of gratitude we owe them, for what they have done, and are doing. I shall not name any of them for fear I might make invidious distinctions—men who are investigators, compilers of books, and contributors to our veterinary literature and journals, and, gentlemen, to what better fountain can we go, to what better source, to seek intelligence and education than the pages of our veterinary journals? To those of you who read them, I fear I can add but little of interest. But I wish we might hear more from Michigan veterinarians through their pages.

About four months since, I received a letter from Secretary Black, reminding me that I was chairman, and suggesting that I write my colleagues on the committee, and in a mild way ordered me to get a move on. He has been prodding at me pretty regularly ever since, and if all of you have heard from him as often as I have, with his other work, he must be a very busy man. I did write the other members of the committee. Dr. McDonald I have not heard from. Dr. Drury did reply, and I may refer to his letter later on. Perhaps if I had got after them as energetically as Secretary Black has followed me, I might have obtained better results.

You may be wondering what all this preamble has to do with a report on Intelligence and Education. Well, all I can say is that, believing myself to be naturally modest and backward, and perhaps somewhat contrary, and in order to be contrary to my predecessors as chairman of this committee, I feel that I must make up in quantity, even if the quality is below par.

As my colleagues have seen fit to maintain a comparative silence, I feel that I am the whole thing, and as I will never have a chance to be chairman of this committee again, I must say something while the chance is open. I will blow my horn while I have a chance.

That recalls to my mind a story I once heard about a man who had a sick jackass. He consulted a doctor, who advised him to get an ounce of red pepper. He was to put the pepper in a tube, put the tube well back in the patient's mouth and blow it down his throat. After the lapse of a few days the parties met and the doctor inquired about the sick jackass. The owner said he was not any better. "Why, that is strange," remarked the doctor, "are you sure you did as I directed you?" "Yes, sir, I did." "You got the pepper?" "Yes, sir." "You put it in the tube?" "Yes, sir." "And you put the tube well

back in his mouth?" "Yes, sir." "And did you blow it down his throat?" "No, sir, I did not," said the man, with tears in his eyes at the thought; "the jackass blew first." Moral: There may be advantage in speaking first.

I have not much to report in the line of intelligence; my sources of information have been limited. From what I can learn, the past year has proven a satisfactory one for the general practitioner. While the horse market perhaps does not compare favorably with the year previous, still it's in a healthy condition. An item in the November REVIEW says: "For the first time since 1892, the value of the horse stock of the United States is now estimated at more than one billion dollars." Notwithstanding the fact that bicycles, automobiles and electric street railways have come into the field, in the last few years, there are more horses than ever before and they are worth more money. The exact figures vouched for by the Secretary of Agriculture, are 16,557,373 horses, valued at \$1,030,705,959. It would seem from those figures that the occupation of the veterinarian will not suffer, at least for some time to come. The latest fad, the automobile, is said to be proving both unsatisfactory and prohibitively expensive for business purposes.

On the subject of education there appears to be a broader field, and more material for consideration and discussion. It is one of the important veterinary problems of the day. Higher veterinary education appears to be a popular theme.

Of American veterinary educational institutions we have the following:

1. Laval Veterinary College, Montreal, Canada.
2. New York-American Veterinary College, New York, N. Y.
3. New York State Veterinary College, Ithaca, N. Y.
4. University of Pennsylvania, Philadelphia, Pa.
5. United States Veterinary College, Washington, D. C.
6. Ohio State University, Columbus, Ohio.
7. Chicago Veterinary College, Chicago, Ill.
8. McKillip Veterinary College, Chicago, Ill.
9. Kansas City Veterinary College, Kansas City, Mo.
10. Iowa State College, Ames, Iowa.

Graduates of the above-named ten veterinary colleges, together with graduates of the now defunct Harvard and Montreal Colleges, are accepted as members of the A. V. M. A.

Other colleges are:

11. Ontario Veterinary College, Toronto, Canada.

12. Grand Rapids Veterinary College, Grand Rapids, Mich.
13. Cincinnati Veterinary College, Cincinnati, Ohio.
14. Indianapolis Veterinary College, Indianapolis, Ind.
15. The Western Veterinary College, Kansas City, Mo.
16. Kansas University, Kansas City, Mo.
17. San Francisco Veterinary College, San Francisco, Cal.
18. Washington State University, Pullman, Washington.
19. Nashville University, Nashville, Tenn.
20. The Universal College, Any Old Place.

This, gentlemen, is the whole bunch, so far as I have been able to learn. You will perhaps appreciate the difficulty to be encountered in getting reliable information which is unfavorable to the various colleges, no matter how true it might be, or however much the schools may deserve to be criticised.

Dr. C. C. Lyford, in his very interesting report on colleges and education in the October REVIEW, says: "In looking over the catalogues from the various colleges one cannot help seeing that they are to a certain extent educators, as their covers, contents and general appearance can but have a certain moral effect on those who enter those colleges. The majority of them are tasty, nicely printed, well gotten up, indicative of character, while others are flashy, cheap, and horsey in appearance, giving one a pang rather than pleasure, and if they were devoid of covers, would be nearer in accord with professional ethics. Is it a wonder that some of our profession, tutored under such conditions, fail to realize that what was seemingly meant for an embellishment, lacks in dignity and quality?" Dr. Lyford says further, that "As a rule, our American veterinary colleges have improved greatly during the past few years, not only in their methods of teaching and length of course, as well as number of subjects taught, while in their clinical demonstrations and especially in operative surgery, many of our Western colleges seemingly are leading the Eastern ones." Dr. Lyford also speaks with regret of the closing of the doors of Harvard, and also that the Veterinary Department of the University of Pennsylvania, which was started on the most elaborate scale of any of our American schools and with a staff of well-qualified, energetic, hard-working men, and later on it was found necessary to take a backward step, the grounds and buildings being taken for other purposes, and in their stead apartments of less commodious proportions and grounds less suitable and quite limited have been made use of.

I am not prepared to comment intelligently as to the stand-

ing and condition of these various colleges, so have given you Dr. Lyford's views, which I doubt not are correct. I am pleased, though, to communicate to you the news that, though the Veterinary Department of the University of Pennsylvania is still in temporary quarters, it has purchased and paid for over an acre of ground, which cost \$45,000, near the centre of the city, and on the University grounds; that it has plans for a building equipment to far excel any other American school, and that the University authorities have pledged themselves to go on with the building in the near future.

To go a step further: I see Dr. Lyford says there are just three colleges at present which can properly be classed as two-year schools. These are the Toronto, Grand Rapids and Wattles, of Kansas City. Taking these three from the total of nineteen, leaves sixteen schools, said to be three-year schools. As I have stated before, only ten of those are recognized by the American Veterinary Medical Association, and I hear from good authority that three of those (the United States, McKillip's, and Iowa State Colleges) are on the ragged edge and really do not merit recognition. Still, again, I understand there are those who are well acquainted with the schools, who have strong feelings against the Ohio State University and the Kansas City Veterinary College. This, then, would leave us five colleges out of nineteen that are gilt-edged and worthy of recognition as per the standard set by the A. V. M. A. This appears to me as a rather astounding state of affairs.

But to show you that there may be more truth than poetry, more cause than you think of, that such a condition may exist, permit me to read to you some parts of President Stewart's address, at the Ottawa meeting of the A. V. M. A. last summer. [Reads from REVIEW, page 632, Vol. XXVII, Oct., '03.] This is surely from good authority, and you will observe that Doctor Stewart not only suggests, but urges very earnestly indeed that watch dogs (pardon the expression) be appointed to see that the various colleges, their managers and professors do as they should do, and as they claim in their announcements and catalogues that they do do. Again, as bearing on this question, I ask your permission to read an editorial criticism from the pen of Prof. Liantard, found in the last issue of the REVIEW. Thus: "The fortieth annual meeting of the A. V. M. A. was important from more than one point of view, and it is not in this chronicle that the many important parts can be brought out; yet there is one among the many which I think may escape attention, and to

which I must refer, because of its connection with similar facts which have occupied the attention of veterinarians in Europe during the last few months. If one reads with care the excellent address of Ex-President Stewart, he will find a most interesting part relating to veterinary education, to veterinary colleges, their curricula, their requirements, the length of their courses, etc., all of which may be resumed in a few words of criticism and warning, viz. : Our colleges are much in need of improvement, and it becomes the Association to see that those improvements exist, not only in catalogues and announcements, but also in reality. Prof. Stewart has done well in sounding the bell of alarm. If one studies the announcements and catalogues of some of the veterinary schools of America, he certainly will find that those of this year are about the same as those of previous sessions. Improvements are much in need."

Ex-President Stewart said in his address, that there remains but one college where students attend in any considerable numbers which has not yet yielded to the good influence of this upward movement. I think he must refer to the Toronto College.

If you are not weary, I would again like to read to you from the October REVIEW, the report of a meeting of Canadian veterinary surgeons. [Reads from page 682.] The gist of this meeting, you see, is the old decrepit and worn thread-bare story of the O. V. C., and how it is to be made a three-year school. It resulted in a resolution being offered and passed as I have read to you. But what's the outcome to be? Is the committee that was appointed going to die the death that usually comes to such committees? Or will it bear fruit? Time, I suppose, will tell. Prof. Smith says he cannot do all this alone, as he would be handicapped by outside institutions. I am not sure in my own mind that Prof. Smith is not right. While for several years past we have all, individually and collectively, deplored the condition of affairs we find ourselves placed in, and have hurled anathemas without limit against Prof. Smith for his seeming stubbornness in not responding to the lash, and coming into line, can we conscientiously to-day, with the preponderance of evidence at hand in regard to the status of most of the other schools, blame him for the stand he has taken? I really believe that I admire his pluck. At Detroit four years ago, at the meeting of the A. V. M. A., I remember scoring the O. V. C. management pretty strongly—so strong, in fact, that Prof. Smith chided me for being so hard on my Old College;

but I did not know the situation then as I do to-day, and I say, with Dr. Rutherford, that "the O. V. C. as a teaching institution stands second to none in the English-speaking world," and there was no room for doubt that if its standard was raised to meet modern requirements, it would soon become the leading veterinary college on the American continent, for while it's a two-term school now, it is so in fact as well as name. If its course were extended to three terms, we may rest assured that it would be a three-year school in fact as well as name under the management of Prof. Smith, and not merely a blind to gain some point.

We, as an association, have a code of ethics that restrains our actions in various ways. May I not inquire, why this code should not apply to colleges, as well as individuals? To my mind, the Chicago, the Kansas City and the Grand Rapids Veterinary Schools should alike be condemned for getting out under the guise that it is a veterinary magazine a publication which is so plainly nothing but an advertisement for the school from which it is issued, and which is so careless in its use of the truth. If they really got out a creditable magazine and kept it free from such manifest and painful efforts at self advertising, there might be no objection. They call them "quarterly bulletins."

Then, again, take the new "Pictorial Cyclopædia of Live Stock", edited by the Hon. Jonathan Periam and Dr. A. H. Baker, President of the Chicago Veterinary College.

Am I an old way-back grumbler, or are such things right and proper?

These things make me think of a new veterinary institution, which might be termed The Universal Veterinary College, granting such a degree as E. M. H. O. D., instructors being veterinary bulletins, farmers' institutes, live stock cyclopædias, bureau of animal industry, etc., etc. To what is the veterinary profession coming?

WM. JOPLING, *Chairman*.

IOWA-NEBRASKA VETERINARY MEDICAL ASSOCIATION.

A very interesting meeting was held at Omaha, Neb., during the Ak-Sar-Ben week, October 7 and 8, and was called to order on October 7 at 4 o'clock p. m. The minutes of the previous meeting were read and approved.

The first paper called for was that of Dr. C. E. Stewart, of

Chariton, Iowa, entitled "Vaccination for Influenza." The Doctor gave a very interesting talk relating his experience with the use of the pneumococcic serum. The Doctor believes that this serum has quite a preventive power and he recommended its use. This line of treatment is in its infancy and, judging from the discussion, it will be taken up and used more where valuable animals have been exposed to influenza. He stated that it should be used within 24 to 36 hours when the first symptoms of the disease appear.

Professor H. R. Smith, of the Nebraska Agricultural College, gave a very fine talk entitled "Fundamental Feeding." This was very much appreciated by all and brought out a very lengthy discussion.

Dr. H. E. Talbot, of Des Moines, Iowa, then read a paper as follows:

SOME INTERESTING CASES SEEN IN PRACTICE SINCE WE
LAST MET.

By Dr. H. E. TALBOT, Des Moines, Iowa.

Our worthy Secretary has assigned the above as my subject for this meeting, but I beg his indulgence and that of those here assembled if, before I have finished, I wander from the straight and narrow path laid out for me and say a few words upon that subject which is always uppermost in my thoughts, "Veterinary Legislation."

Upon the subject assigned me, however, I wish to make mention of a few rather unusual cases which have come under my observation and which may be of interest to you as something out of the ordinary.

Case No. I—Oleander Poisoning.—There was brought to my office June 10th, 1902, a bay gelding, four years old, with what seemed to be a very slight touch of colic, which readily yielded to treatment by the administration of Indian cannabis, one-half ounce, oleum lini, one pint. On more careful examination found all visible mucous membranes light colored; the Schneiderian and buccal membranes white in color. Pupils dilated; temperature slightly elevated; pulse small and very slow (twenty-five per minute). The animal seemed to be insensible to pain, capillary circulation poor. Puncturing the Schneiderian membrane with a pin would neither cause pain nor hæmorrhage. The animal was left in hospital until next day, no more treatment being given. On June 11th animal seemed insensible to pain and hearing; no appetite, temperature normal, pulse 28 per min-

ute, no intestinal murmur. On general examination would have been taken for a dummy. About one hour before the animal had been brought to the office he had eaten the leaves and branches from a large oleander plant. The treatment consisted of laxatives, stomach tonics and heart stimulants, relying principally on digitalis. The animal made a partial recovery and has been under my observation continually since that time. The horse, once a beautiful topky driver, is now a stumbling, worthless animal, and would still be taken for a dummy.

Case No. II—Rupture of Flexor Metatarsi Muscle.—Roan gelding, six years old, brought to hospital and reported to be suffering from a broken limb, which I knew was impossible from the fact that the animal had been driven ten miles; but on approaching him from a distance the left hind limb hung pendulous and had all the appearances of being fractured. There was extreme lameness and the limb was carried with flexion of the stifle joint and great extension of the hock. The limb could not be brought forward without assistance and the fact that the stifle and hock did not work in harmony would give the impression of a broken bone. The absence of a fracture was at once shown, as the limb would still support weight when brought forward. The accident occurred by violent kicking. The only treatment given was perfect quietude, hot applications over the region of the muscle twice daily, followed by camphorated liniment. Complete recovery in six weeks. This case at first caused me great anxiety, being unable to diagnose the lameness.

Case III—Paralysis of the Radial Nerve.—Black gelding, eight years old, brought to hospital for dental work. Was compelled to cast the animal, as he would not allow the mouth to be touched while standing. Struggled and fought the greater part of the time during the operation, and to my surprise got up with complete paralysis of the radial nerve of the right limb. He was unable to support weight at all, went down two or three times before discovering could not use limb. The limb takes the position of that of a very painful affection of the foot, the shoulder and elbow are both extended, while the joints below are flexed. The anterior wall of the foot will be in contact with the ground and the limb seems very much too long. In attempting to move, the shoulder and elbow can be brought forward, but unable to bring the rest of the leg into position, consequently cannot support the weight of the body, the limb collapsing at every effort to bear weight. Once seeing a case of

radial paralysis, diagnosis of same becomes very easy. The treatment consisted of perfect rest only, as treatment of a former case proved to be of no avail. Perfect quietude being all that was necessary, recovery was complete in eight weeks.

Case No. IV—Pericarditis (due to fracture of rib).—Aug. 20, 1903, I was called to see bay stallion, five years old. On my arrival found animal down and unable to rise and to all appearances seemed to be dead. Close examination revealed feeble respiration, pulse imperceptible. I at once administered $\frac{1}{30}$ of a grain of nitroglycerine hypodermically. In thirty minutes administered one grain of strychnine sulphate hypodermically. In one hour the horse was able to rise. I gave digitalis, $\bar{3}$ ij, aromatic spirits of ammonia, $\bar{z}$ ss, whisky, $\bar{z}$ ij. Stimulants were continued four hours. When animal was able to stand the pulse was very much accelerated (110 per minute), but would frequently miss a beat or two. Later on became very irregular. The jugular vein was very much enlarged and showed venous pulse. The horse has been continually treated since, treatment consisting almost wholly of fluid extract of digitalis, $\bar{3}$ ij doses twice daily. The patient still continues to have spells of collapse two or three times per week, each lasting from thirty to forty minutes, but soon recovers upon the administration of a $\bar{3}$ ij dose of digitalis. At present, patient is very much emaciated and ultimate recovery is very doubtful.

I will now make a short report of the condition of veterinary affairs in Iowa as they are at the present date. We have 221 graduates registered and 544 non-graduates. There is very little of the opposition to the law which was so apparent two or three years ago and violations are becoming more rare as law is more generally recognized and its beneficial effects appreciated. I have nothing but praise for the veterinarians of Iowa for their loyalty to the board and their efficient aid in the law's enforcement; and, with their coöperation we expect in the near future to have our law as greatly respected and as generally obeyed as any upon the statute books of the State. I have noticed, almost with feelings of regret, the passing of the old-time "hoss-doctor" from our midst. By this I do not refer to the average non-graduate of our State, for I have generally found him progressive and fully capable of keeping abreast of the times. What I do refer to is the old-time practitioner; the man who still does things just as his grandfather did before him, who has cast himself in front of the car of progress and who deprecates the fact that the world moves on. He is still to be found,

a remnant of a once numerous type, powerful in his day and once a leading figure in his community. He has fought the introduction of advanced methods: he has taken his stand, and the progressive veterinarian has passed on and left him all alone. But who will begrudge him the remnants of the fame which was once his own? Who would shatter the old ideals upon which his faith is founded? He stands to-day the connecting link between the past and the present in veterinary science. He is the sole survivor of a once numerous race. The following has appealed to me as a truthful description of this type:

THE OLD HOSS-DOCTOR.

His nose was red and his eyes were blue,
His whiskers waved when the wind blew through;
He spit on his hands and he took a chew
And he said; "I'm a hoss-doctor!"

"I've doctored stock fer fifty year,
I've dosed 'em there and I've dosed 'em here:"
And he stuck his thermometer over his ear
As he said; "I'm a hoss-doctor!"

"Now, way back there in '43
When I was a boy, my daddy, he
Took me with him an' he learned it to me;
That's why I'm a hoss-doctor!"

"There's not a man in the county, I guess,
That I ain't done work for, more or less:
I hate to brag, but I must confess
I'm a first-class hoss-doctor!"

"If your hoss won't eat, or a cow is sick,
Jest send for me and I'll get there quick;
If it's four in the mornin' I never kick;
You see, I'm a hoss-doctor!"

And I thought, as the old man walked away;
"You have served your time, you have had your say,
You are living in memories of yesterday,
When you were the hoss-doctor!"

"It is sad to think that you cannot stand
With the first practitioner of the land;
But you did your best with the stock in hand:
Hats off to the hoss-doctor!"—*Harry D. Bruner.*

In the evening a number of reports of cases were given. Dr. Austin brought up the question of parturient paresis. This was discussed by Drs. Simpson, Jacobs, Stewart, Talbot, Hinkley,

Thomas, and Jensen. The consensus of opinion was that when the Schmidt treatment is used one should aim to allow large quantities of air to enter with the fluid. Some had used the air treatment with very good success.

The meeting then adjourned until 9 A. M. the next morning, when a demonstration in stock judging was given by Prof. H. R. Smith at the Union Stock Yards. This consumed the entire morning.

The meeting convened again in the City Hall at 2 o'clock. The first paper listened to was that of Dr. Bostrum entitled "Pneumonia in Calves."* This paper was very instructive. The Doctor thought that this disease was highly contagious and that it often occurred on premises where diseases, such as abortion in cows and white scours in calves, existed. This paper brought forth quite a discussion, as this is a disease that is causing severe losses in the West.

Dr. S. Avery, Agricultural Chemist, read an interesting paper entitled "Analysis of Some of the Most Prominent Veterinary Proprietary Remedies," which was quite amusing as well as instructive to the members present. He showed what ridiculous formulæ are brought together and sold to the farmers to relieve the ailments of their stock.

Dr. S. Stewart, of Kansas City, Mo., was present and gave the members a very interesting review of the American Veterinary Medical Association meeting at Ottawa. He stated that it was one of the most instructive meetings that the Association had ever held, and from the description he gave many regretted that they did not have the pleasure of attending the same.

After adopting the following resolutions, the Association adjourned:

"WHEREAS, The Mayor and the City Council of Omaha have kindly furnished our Association suitable rooms for meeting purposes; be it

"*Resolved*, That we extend to them our hearty thanks for their kindness.

"WHEREAS, Dr. H. L. Ramacciotti arranged at his infirmary an appropriate clinic, incurring both expense and inconvenience, for the benefit of the Association members; therefore, be it

"*Resolved*, That we extend to him our hearty thanks for his coöperation and kindness.

* Will be published in an early number of the REVIEW.

"WHEREAS, Prof. H. R. Smith, of the University of Nebraska, conducted a highly interesting and instructive demonstration of the principles of stock judging; be it

"*Resolved*, That we express to him our hearty appreciation for his efforts.

"WHEREAS, Prof. S. Avery, of the University of Nebraska, presented a valuable paper embodying much painstaking work, dealing with the chemical analysis of certain patent medicines sold upon the market; therefore, be it

"*Resolved*, That we extend to him our hearty thanks for his efforts.

"(Signed) J. H. McNEIL, Chairman; V. SCHAEFER, RICHARD EBBITT, D. H. MILLER."

The following members were present: C. J. Hinkley, Odebolt, Iowa; C. Olson, Harlan, Iowa; J. G. Parslow, Shenandoah, Iowa; W. A. Thomas, Lincoln, Neb.; Richard Ebbitt, Grand Island, Neb.; M. Jacobs, Ames, Iowa; W. H. Austin, Newton, Iowa; C. E. Baxter, Oakland, Iowa; H. Jensen, Weeping Water, Neb.; Hal C. Simpson, Dennison, Iowa; H. E. Talbot, Des Moines, Iowa; J. W. Haxby, Villisca, Iowa; S. T. Miller, Shelby, Iowa; V. Schaefer, Tekamah, Neb.; D. H. Miller, Harlan, Iowa; C. E. Stewart, Chariton, Iowa; A. Bostrum, Minden, Neb.; H. L. Ramacciotti, Omaha, Neb.; A. T. Peters, Lincoln, Neb.; J. H. Gain, Lincoln, Neb.; W. J. Cass, Lincoln, Neb.; C. F. Leslie, Wahoo, Neb.; S. E. Cosford, South Omaha, Neb.; Carl W. Gay, Ames, Iowa; S. Stewart, Kansas City, Mo. (visitor). A. T. PETERS, *Secretary*.

VETERINARY MEDICAL ASSOCIATION OF NEW YORK COUNTY.

The regular monthly meeting was called to order March 2, at 8.30 P.M., President Dr. J. E. Ryder in the chair. Members present: Drs. C. E. Clayton, Roscoe R. Bell, J. E. Ryder, W. D. Critcherson, R. Dickson, T. A. Kellar, G. F. Bowers, W. Lellmann, T. G. Sherwood, R. W. McCully, F. C. Grenside, Wm. Sheppard, R. W. Ellis, J. L. Robertson, A. O'Shea and D. J. Mangan. Visitors: Dr. F. J. Loomis, New York City, and students of the New York-American Veterinary College.

The minutes of the previous meeting were adopted as read. No reports of committees were made. The essayists of the evening were absent.

Dr. Wilfred Lellmann presented a specimen of a horse's

heart, which showed a pronounced dilatation of the ventricles, especially the right ventricle. In this case Dr. Lellmann said Dr. Sherwood called him in consultation. The animal had suffered with hæmorrhages from the nostrils. On examination they found nothing morbid in the nasal cavities. It was decided to exercise the animal, which was done at once. After traveling a distance the animal commenced to bleed from the nostrils, and the pulse was very weak and intermittent. On driving the horse further it got an attack of vertigo, fell and died. A post-mortem was held at once. The heart showed a very decided dilatation of the right ventricle, and atrophy of its wall; there was a fatty degeneration of the myocardium; in fact, the heart muscle had the appearance of boiled beef. Dr. Lellmann said this was a true case of heart disease in the horse. He also stated that the belief that a hæmorrhage from the lungs is frothy is not correct; blood may come from the lungs and not appear frothy, only when the animal would cough. In the lungs there was a hæmorrhagic œdema present. Owing to the dilatation of the right ventricle the pulmonary circulation was very poor, the rupturing of the minute capillaries causing the hæmorrhage. No doubt, Dr. Lellmann said, the same morbid condition existed in the capillary walls as was found in that of the heart. The hæmorrhage from the nostrils in all the attacks was never very profuse.

The members examined the specimen, and various questions were put to the Doctor, which he answered.

Drs. Sheppard, Critcherson, Clayton, Kellar, Bell, Lellmann, Bowers and Grenside took part in the discussion which followed, during which several of them recited the various experiences which they met with in bleeders.

Dr. Bell made a few remarks regarding azoturia, in which he stated that he had under his observation about eighty young contractor's horses which have worked spasmodically during the cold season, and not one case of azoturia developed. This he attributed to the fact that the animals were fed on a molasses diet throughout. These animals had worked and were run down during the summer. In the winter work got slack and the animals increased rapidly in flesh and would work only in spells.

Dr. McCully stated that he had 250 horses under his observation and that for the past two years they have been fed on the molasses diet, and only one case of azoturia developed during that time; where formerly it was extremely common every

year. He also mentioned that the percentage of colics and digestive troubles were greatly reduced.

Dr. Ellis said that he had a case of azoturia in a horse which received about three quarts of molasses per day.

Dr. Bell mentioned that he had a case of heaves in a trotting mare which showed such remarkable improvement in breathing and condition on the molasses diet, that she was able to win a race in 2.14.

Other members discussed this subject of molasses diet, and it seemed to be the unanimous opinion that the greatest obstacle to its use was the trouble of mixing the feed.

Dr. Grenside asked how is it that boiled feed and bran-mash had a laxative effect on the bowels. Several members answered this question, in which it was stated that bran consisted of cellulose, of which 60 to 70 per cent. was indigestible; therefore producing an irritation of the bowels, increasing the intestinal juices and peristalsis.

This question was discussed to considerable length, which was very interesting.

The meeting was then adjourned.

D. J. MANGAN, *Secretary*.

WISCONSIN SOCIETY OF VETERINARY GRADUATES.

The fourteenth annual meeting was held at the Capitol Building, Feb. 4, at 3 P. M., and was called to order by the President, the following members responding to roll-call: H. Arpke, S. Beattie, J. W. Beckwith, B. L. Clark, C. M. Crane, C. E. Evens, H. F. Eckert, A. H. Hartwig, R. S. Heer, R. Kuoni, E. L. Morgenroth, E. H. Newton, J. F. Roub, E. D. Roberts, T. A. Schneekloth, Chas. Schmitt, S. S. Snyder, L. C. Tasche, and A. S. Alexander.

The minutes of the last meeting were read by the Secretary and adopted. The Secretary's and Treasurer's reports were read and adopted.

Five visitors applied for membership, viz.: Drs. L. A. Forge, Burlington, Wis.; B. J. Zimprich, Sun Prairie, Wis.; D. B. Clark, Janesville, Wis.; E. G. Schultz, Mayville, Wis.; and A. S. Alexander, Madison, Wis., all graduates of the Chicago Veterinary College. The Censors reported favorable and they were declared elected.

Dr. Alexander briefly reported on an address to the Farmers' Institute relative to the licensing of stallions in Wisconsin, which met the approval of the Society.

The Code of Ethics came under discussion by several members, and as the committee appointed to revise the code were not all present, the discussion was closed on motion. Motion was made and carried that the committee be discharged.

Delinquent members and the ledger accounts came under discussion. Dr. Snyder moved that all members be notified that their dues for 1904 are due and until paid members will not be in good standing. The motion was carried.

It was moved and seconded that the Secretary be empowered to purchase new books and transfer all accounts now in good standing. (See section 12.) Carried.

A communication from Dr. W. H. Welsh, Secretary of Illinois Veterinary Association, was read, inviting our Society to attend their meetings.

On motion, the literary programme was carried over to the evening session, and the Society proceeded to the election of officers, which resulted as follows:

President—Dr. R. S. Heer.

Vice-President—Dr. Charles Schmitt.

Secretary—Dr. S. Beattie.

Treasurer—Dr. Charles Crane.

Dr. Heer briefly addressed the meeting, thanking the Society for the action they had taken in conferring upon him the honorable position of President, and after re-appointing the Board of Censors it was moved, seconded and carried that the meeting adjourn until 7.30 P. M.

Evening Session.—The Society met at 8.00 P. M. and continued with the unfinished business.

Our semi-annual meeting came under lively discussion, and it was carried that our semi-annual meeting be held at Madison during the time of the Monona Lake Assembly.

Dr. A. H. Arpke read a paper on "Wounds of the Foot," which was discussed by Drs. Roub, Schmitt, Eckert, Roberts, Tasche, Alexander and Hartwig.

Dr. J. W. Beckwith read a paper on "Proctitis and Its Close Resemblance to External Ulcerative Ano-Vulvitis,"* which was discussed by Drs. Alexander, Heer and Schmitt.

Dr. Chas. Schmitt read a paper on the benefits received from the product of the short course in agriculture given at Madison. Discussed by Drs. Alexander, Hartwig and Roberts.

Dr. J. F. Roub reported three very interesting cases, viz:

* Will be published in an early number of the REVIEW.

"An Anomalous Pig"; "Dentigerous Cyst";* and "A Painless Case of Impaction in a Colt Eight Months Old."†

Dr. E. D. Roberts reported on a herd of horses from the West afflicted with locomotor ataxia.

Dr. S. S. Snyder reported on the "Treatment of Parturient Paresis by Oxygen,"† which was discussed by Drs. Alexander, Schmitt, Eckert, Roberts and Roub.

Dr. A. H. Hartwig reported on the "Treatment of Parturient Paresis by Potassium Iodide," which was discussed by Drs. Eckert, Roub, Snyder and Crane.

It was moved, seconded, and carried that the meeting adjourn to meet at Madison, subject to the call of the President and Secretary.

CLINICS.

February 5th, 8.30 A. M., the Society met at Beattie's Boarding Stable, where Dr. R. S. Heer performed cunean tenotomy for relief of spavin lameness.

Dr. J. F. Roub operated for scrotal hernia in a two-year-old colt in a most creditable manner.

Drs. A. H. Arpke and L. C. Tasche performed metacarpal neurectomy for relief of permanent lameness caused by osteoncus of the pyramidal process in a ten-year-old draught horse.

S. BEATTIE, *Secretary*.

CALIFORNIA STATE VETERINARY MEDICAL ASSOCIATION.

The regular quarterly meeting was held in Room 1000, Palace Hotel, San Francisco, on March 9th, and was called to order by President Chas. H. Blemer, the following gentlemen answering to the call of the roll: Drs. Archibald, Blemer, Browning, Corcoran, Creely, Donnelly, Egan, Fox, Fisher, Glasson, Horgarty, Jackson, Kraker, Lawrence, McCarty, McMurray, Sorenson, Somers, Spencer, Steers, Williams, Ward and Welch.

The Secretary read the minutes of the last meeting, which were duly approved.

The Board of Examiners reported favorably on the applications of the following gentlemen for membership: Drs. Alexander, Eddy, Danielson, Button and Dawdy, and they were unanimously elected.

* Published elsewhere in this number.

† Will be published in an early number of the REVIEW.

It was moved, seconded and carried that the thanks of this Association be tendered to the Golden Gate Park Driving Club and to Dr. Ira Barker Dalziel, for their courtesy in furnishing a room for the meetings of this Association.

Dr. Archibald then brought up the subject of ptomaine poisoning in dogs, which the Doctor claimed might be often attributed to strychnine poisoning. A lengthy discussion followed, which was participated in by most of those present.

Dr. Ward then made some remarks on a disease that has manifested itself in Monterey and several other counties, afflicting dairy cattle, and is called by the dairymen "mad itch". After a somewhat extensive discussion, nothing definite being determined, it was resolved to take up the subject at some future meeting, Dr. Ward and several other members promising to gather data relating to the matter.

Dr. McCollum being absent, his paper was then read by Dr. Fox, the subject chosen by the essayist being "Swine Plague and Hog Cholera". Some novel suggestions were advanced as to treatment of these diseases, the efficacy of which was vouched for by State Veterinarian Blemer and Dr. D. F. Fox. A very interesting discussion followed, in which those present seemed to take great interest.

Dr. Sorenson was then called upon, and responded with an exceedingly interesting and well-written paper on "Surra". As there were several veterinarians present who, with the essayist, had spent many months in the Philippine Islands, the pathology of the disease was very intelligently discussed, and much information of value gleaned.

Dr. Creely then followed with a good wholesome talk upon lameness, and, speaking from notes, the Doctor reviewed the subject as far as time would permit in such an earnest and convincing manner that his hearers felt that they were back to their college days, and listened with profound attention. The following gentlemen were appointed essayists for the next meeting: Drs. Ward, Donnelly, Boomer, Eddy, Falkner, and Corcoran, the President not failing to notify them the rule of five dollars fine for failure would be strictly enforced.

The meeting than adjourned to meet in the banquet hall, where a sumptuous repast awaited them, and mirth, reason and goodfellowship prevailed until the early hours of the morning called them to rest for the resumption of life's stern battle. During the festivities a photograph was taken by flashlight.

P. H. BROWNING, *Secretary*.

PASSAIC COUNTY VETERINARY MEDICAL ASSOCIATION.

The regular monthly meeting was held at 169 Paterson St., Paterson, N. J., April 5, with President Dr. Wm. Herbert Lowe in the chair. The following members were present :

Drs. T. J. Cooper, John H. Degraw, Wm. J. Fredericks, Wm. Herbert Lowe, J. Payne Lowe, W. H. Lowe, Jr., and Augustus Berdan.

The minutes of last meeting were read, and approved as read. The Secretary reported that he had been unable to get any communication from our Treasurer.

Dr. Augustus Berdan was proposed for membership by President Lowe, and was unanimously elected a member of the Association.

Dr. Cooper brought a specimen which was found in the mountains of New Jersey, and exhibited a skull of a prehistoric animal, which was examined by all members present with much interest. This specimen will be sent to the American Museum of Natural History to find out what the proper name is. Dr. Cooper was tendered a vote of thanks from the members present.

Dr. W. H. Lowe, Jr., reported a dog show held in the city of Paterson in March for the benefit of the New Jersey Fish and Game Protective Association. This money will be used for stocking streams and putting game in the mountains. This show was a great success and was very largely attended. Dr. Cooper said this show was a very creditable show for Passaic County, and should interest the people in the breeding of better dogs.

Dr. W. H. Lowe, Jr., made a motion that the Association be authorized to get the necessary evidence in the case now pending, and if the evidence warrants action the Association will prosecute the case at once.

Dr. Augustus Berdan was elected to be essayist at our next regular meeting, which will be held on Tuesday evening, May 3, 1904.

As there was no other regular business to transact, adjournment occurred.

WM. J. FREDERICKS, *Secretary*.

MAINE VETERINARY MEDICAL ASSOCIATION.

The regular quarterly meeting was held at Waterville, April 13, beginning with a clinic at 3 P. M. at Dr. Joly's office. Members present were Drs. L. Sand, A. W. Cleaver, Bar Harbor ;

F. E. Freeman, Rockland; R. E. Freeman, Dexter; A. Joly, Waterville; and I. L. Salley, Skowhegan.

First clinic, line firing for enlarged tendon, by F. E. Freeman; No. 2, castration, by I. L. Salley; No. 3, neurectomy for navicular arthritis, left leg, by Dr. L. S. Cleaver; right, by Dr. A. W. Cleaver; No. 4, the removal of large melanosis from the eye-socket.

These operations were all performed under an anæsthetic. The neatness and dispatch with which they were done, showed the operators to be experts, especially in the two cases of neurectomy. The clinic was a success in every way, although Dr. Joly was on the sick list.

At 6.30 a banquet was served at the Elmwood, followed at 7.30 by the business meeting.

Dr. L. S. Cleaver was elected President, *pro tem*, because of the absence of both President and Vice-President. Dr. I. L. Salley was elected Secretary *pro tem*. The regular business of the meeting was attended to. Several cases were reported and discussed. A veterinary bill for the next legislature was discussed.

Voted to adjourn to meet in Bar Harbor in July.

I. L. SALLEY, *Secretary, pro tem.*

NEBRASKA VETERINARY MEDICAL ASSOCIATION.

A very interesting clinic was held at the University Farm on Thursday, January 21. Those taking part in the operations were Dr. J. H. McNeil, of Ames, Iowa; Dr. V. Schaefer, of Tekamah, Neb.; and Dr. J. H. Gain, of Lincoln, Neb. Dr. McNeil performed the Peters operation for spavin and Dr. Schaefer performed the operation of the removal of the arytenoid cartilage. A number of interesting cases were presented for diagnosis. The clinic was pronounced a decided success.

After lunch the members visited the Lincoln Importing Company to inspect their latest importation of coach and draught stallions. The meeting then convened at 2 o'clock in the Experiment Station building. In the absence of the chairman, Dr. H. Jensen, who was unavoidably detained by the death of his brother-in-law, Dr. J. H. Gain was elected temporary chairman.

The first paper was presented by Dr. G. R. Young,* of Omaha, Neb. He described some very interesting cases that he

* Will be published in an early number of the REVIEW.

had met with in his practice. This brought out a free discussion by Drs. Gain, Schaefer, and Thomas.

The next paper called for was that of Dr. Schaefer's on "Malignant Œdema."* This paper was discussed freely, for the Doctor stated that large quantities of potassium iodide could be used. In the discussion the fact was brought out that these cases of malignant œdema are not at all uncommon and if such good results can be obtained by using potassium iodide it is certainly of importance that the practitioners be informed.

The next paper presented was that of Dr. McNeil's. The Doctor gave a talk on exostosis. His talk was the most instructive on this subject that the Nebraska veterinarians had ever had the pleasure of listening to. The Secretary regrets very much that no stenographer was present to take down this valuable address. However, we hope that in the near future Dr. McNeil will be able to have his talk published in this journal so that other veterinarians may be profited by the same.

This finished the reading of the papers. The chairman was then instructed to appoint a committee on Legislation to report at the next meeting. The Association then adjourned to meet in Omaha during the Ak-Sar-Ben week.

The following members were present: H. L. Ramacciotti, Omaha; G. R. Young, Omaha; Geo. P. Tucker, Lincoln; J. H. Gain, Lincoln; V. Schaefer, Tekamah; G. Robertson, Beatrice; J. S. Anderson, Seward; W. A. Thomas, Lincoln; J. D. Sprague, David City; C. A. McKim, Norfolk; W. S. Cass, Lincoln; A. T. Peters, Lincoln. The following visitors were present: Drs. E. E. Brown, Kansas City, Mo.; J. H. McNeil, Ames, Iowa; H. P. Miller, Sunbury, Ohio.

A. T. PETERS, *Secretary*.

DR. WM. DOUGHERTY, of Baltimore, Md., after thirty years of active practice, has retired, and has been succeeded by Drs. John F. DeVine, of Goshen, N. Y., and W. H. Martenet, of Baltimore. We sincerely trust that the good doctor, who is one of the most loyal of veterinarians as well as a prince of good fellows, may long live to enjoy his well-earned rest, and also (now that he will have abundance of opportunity,) that he will tell REVIEW readers just what a "Crab" is.

WELLS BAKER, a well-known New York horseman and self-made veterinary surgeon, dropped dead in the stable where he boarded his horse, just after returning from a drive, on April 22. Heart disease and nephritis was assigned as the cause.

NEWS AND ITEMS.

EDWARD L. LEWIS, M. D. C., V. S., has removed from Temple, Texas, to Austin, Texas.

Dr. HORACE RICE, Little Rock, Arkansas, spent a few days among friends in Kansas City recently.

THE eleven-year-old son of Henry McDonough, Brooklyn, N. Y., has been cured of a severe form of tetanus by intra-spinal injections of anti-tetanine.

PROF. CURTISS is in favor of a department at the Agricultural College, Ames, Iowa, to give instruction in slaughtering, canning and curing meat.

EUGENE BURGET, D. V. S., Mayor of Wadsworth, Ohio, was elected a director of the Medina County Agricultural Society in February last.

DR. W. H. LYTLE, of Jefferson, Iowa, has received an appointment as assistant inspector, B. A. I., and assigned for duty at Ottumwa, Ia.

DR. GEO. W. BLANCHE, I. S. C., '02, of Belle Plaine, Iowa, was recently appointed a member of the Iowa State Board of Veterinary Examiners.

"OUR new veterinary law is perfection; we have convicted every person arrested."—(*E. J. Creely, D. V. S., San Francisco, Cal.*)

DR. ROSCOE R. BELL of the REVIEW acted as veterinarian to the Horse Show in Brooklyn the latter part of April. It was a success from all points of view.

DR. E. M. NIGHBERT, B. A. I., formerly stationed at Kansas City, has been transferred to Spencer, N. C., on Texas fever and other infectious animal diseases.

C. E. BROWN, D. V. S., D. C. M., has removed from Neillsville, Wis., to Portland, Oregon, where he has purchased property and will fit up an up-to-date infirmary for horses and dogs.

DR. ROBERT DICKSON, of New York City and Seabright, N. J., was married on April 6 to Miss Kalb, also of New York, and has established his home near the historic Rumson Road, Seabright, on a beautiful estate which he has recently purchased and which he will utilize in a professional capacity. Dr. J. Elmer Ryder, of New York, was best man.

"SORE LIPS IN LAMBS."—Prof. N. S. Mayo, State Veterinarian of Kansas, who described an extensive outbreak of this disease in the March REVIEW, and asked his professional brethren for information concerning the same, writes under date of April

7: "Through the kindness of Dr. Mohler, I find that the disease is probably facial dermatitis. It is also known as 'impetigo labialis' in Canada, 'contagious pustular dermatitis' and 'crusta labialis' in England and Scotland, and 'maulgrind' or 'lämergrind' in Germany." . . . We have also received from Dr. R. N. Mead, of St. Paul, Minn., the notes collected by him and Frederick Priest in 1895 for a thesis and submitted by them to the Dean of the Veterinary College of the Ohio State University. Dr. Mead states that he has diagnosed the disease on two occasions during the past four years. While the crowded condition of our pages will not permit of their publication in this issue, they will appear in an early number.—[EDITOR].

WHAT REVIEW SUBSCRIBERS SAY.

"THE REVIEW is the salt of earth to me."—(*H. Jensen, M. D. C., Weeping Water, Neb.*)

I CONGRATULATE YOU upon the success the REVIEW has met with; it should be upon the table of every live veterinarian."—(*J. H. McNeil, V. M. D., Dean Vet. Dep't Iowa Agr'l College, Ames, Iowa.*)

"I HAVE been a reader of the REVIEW for several years, and I consider it a valuable periodical."—(*E. M. Nighbert, V. S., Spencer, N. C.*)

"THE practitioner without the REVIEW, or its equal, is the practitioner without an education."—(*E. I. SMITH, D. V. M., Franklinville, N. Y.*)

"YOUR noble efforts are appreciated by the veterinarian the world over. Send it along. We will not keep house without it."—(*W. H. Deadman & Sons, V. S., Ishpeming, Mich.*)

"The REVIEW is one of the pleasant things we have to look forward to, and I should be greatly disappointed if it should fail to arrive."—(*C. H. Jewell, Vet. 13th Cavalry, Manila, P. I.*)

"I CALL THE REVIEW my teacher since leaving college. To keep up with the times the REVIEW is a necessity for every live veterinarian."—(*Frederick R. Whipple, M. D. V., Kewanee, Ill.*)

"As a hearty eater testifies to the ability of the chef, so the renewal subscriber bears testimony of appreciative gratitude to the publishers. Volume XXVII towered, like Saul of Tarsus, over its predecessors, and the editors may justly feel proud of their success."—(*Peter F. Bahnsen, V. S., Americus, Ga.*)

AMERICAN VETERINARY REVIEW

JUNE, 1904.

EDITORIAL.

EUROPEAN CHRONICLES.

PARIS, FRANCE, April 15 1904.

AN AMERICAN VETERINARIAN HONORED ABROAD.—When, after many years of earnest and conscientious work, one is recalled to other duties he may leave the old field with the self-satisfaction that he has done his best and that he has fulfilled the needs of his calling according to the requirements demanded by his superiors—to him these feelings may be satisfactory. But when the appreciation of the value of his services is offered to him in the shape of some handsome gift, as a remembrance of pleasant business relations, there is no doubt a great addition to the self moral approval one carries with him. Such must have been the case with Dr. J. F. Ryder, who has been connected with the foreign cattle trade of Birkenhead for a long period as the American Government representative. Prior to his leaving for America, where no doubt a higher position is awaiting him, he was presented by his friends engaged in the cattle business at that port with an address and a piece of silver plate, consisting of a massive bowl, weighing upwards of 70 ounces. According to the *Veterinary Record*, where I find this information, "It is heavily chased, the ornamentation occupying separate panels around the body of the bowl, whilst the edge is further adorned by a graceful pierced gallery. Two of the panels have been left plain and upon one of these is tastefully engraved 'J. F. R.', while the other bears the inscription: 'Presented by a few Birk-

enhead friends.' The bowl stands on ebony plinth and is provided with a gilt net for flowers. The illuminated address, which is contained in a handsome morocco folding frame, sets forth the occasion and bears a list of the names of the subscribers to the presentation."

I congratulate Dr. Ryder and appreciate fully how proud he must feel in coming back home with such a gracious souvenir.

* * *

ADVANCE IN THE CURATIVE TREATMENT OF TUBERCULOSIS.—If by various methods, like that of Bang or that of von Behring, we are to be relieved at an early date from tuberculosis, this date is yet uncertain, perhaps far off, and it is not improper to think that after all it is just as well to depend on the cure of the disease than to wait for the practicability of preventive measures, which, with the exception of that of Bang, have yet to be demonstrated.

This is at least the opinion of Dr. Hauptmann, veterinary director of the abattoir of Warnsdorf, which he expresses in a communication published in the *Zeitschrift für Thiermedecin*, where he approaches the question with proofs to back him up.

For Dr. H. there is at present two modes of treatment theoretically useful. One consists in strengthening the resisting power and facilitating recovery by hygienic measures. Another consists in the use of antiseptics and therapeutic serums. Numerous are the reports concerning the many therapeutic methods that have been recommended in the treatment of tuberculosis. Another is added to the list. To succeed it is proper to resort to agents possessing a known action, either on other phytoparasitic infections or on intoxications by alkaloids or microbial toxins. Iodine has all these conditions, and a new preparation of iodine has been used by Dr. Hauptmann.

* * *

There is a chemical compound resulting from the combination of monochloride of iodine with oil of sesamus and which is known as iodipine. This compound offers such precious effects that it deserved to be tested against tuberculosis and its mi-

crobes. The experiment was carried out on bovines taken from barns which were known as highly tuberculous. First, three heifers, 15 months, two years and a half, and a cow, nine years old, were used. All three had reacted to tuberculin.

They received every day three tablespoonfuls of iodipine per mouth. The experiment was begun October 1st and closed November 22d. They were then tuberculined, and all three gave a positive reaction. The two-year-old heifer was killed. At the post-mortem only tuberculous lesions, very small, were found, and these were encysted and harmless—there was a tendency to recovery.

Two other cows were added to the two left, and the experiments continued by the subcutaneous injection of iodipine, the doses being increased gradually in such a way that in about one month from 420 to 600 grammes of iodipine were injected. One of the animals received every second day 50 grammes during 20 days. At the end of the experiment the four animals were again submitted to the tuberculin test, and none reacted. With such results Dr. Hauptmann considered his subjects recovered—an opinion which seems to have been confirmed by the examination and test made of the lesions gathered at the post-mortems of the animals. In all the animals there were found only entirely cicatrized tuberculous lesions. Prof. Johne, of Dresden, who examined them, says the animals were recovered.

But in the meanwhile let us watch and listen later on to the result that von Behring's methods will give, for, after all, it may yet be the one by which bovine tuberculosis can be best controlled. So far its practical results in Germany are said to be excellent.

* * *

DIFFICULTIES OF VETERINARY RECOGNITION IN ENGLAND.—Veterinarians all over the world seem to have a great deal of difficulty in obtaining a fair recognition of their value and of the essential fact that they are the only ones who are fitted to exercise some special functions pertaining to veterinary

medicine. In one country it is the official protection of their profession which they cannot obtain; in another it is the official recognition of the rank that army veterinarians are entitled to; in a third it is their social standing which is denied by the people; or again it is the refusal to resort to their services as veterinarians, as sanitary officers, or as inspectors which is demanded and sometimes obtained by the very ones who ought to protect them, and who by their own knowledge and standing ought to know better.

This has been the object lately in the *Veterinary Record* of two sharp remarks from the editor. It seems that a rumor had taken place that a certain bill was about to be proposed in the House of Commons, in which a clause was "that it be an instruction to the Committee to leave out 'Veterinary Surgeon' in Clause, etc., etc." Very wisely the editor of the *Record* remarked that to remove a veterinarian from the post in question to have the duties attached to it filled by a medical officer was a dangerous step, and he recalled too well that "to leave out the veterinary inspector, when disease of animals is diagnosed, is to put into the hands of untrained persons a dangerous and autocratic power. The search by doctors for tuberculous udders, scarlet fever rashes and diphtheritic symptoms, has too often led to gross errors, heavy expenses, interference with legitimate trades and, worse than all, to the overlooking of direct human contamination as the source of outbreaks of disease."

It seems that on this occasion the clause to exclude the veterinary inspector was introduced by members of Parliament who have no special knowledge of veterinary science, and, whether the bill passes or not, may yet be a question.

* * *

Prof. Williams, in the March number of the *Veterinary Journal*, has also an excellent article on the same subject, viz., the constant attempts of official personages to ignore the claims of veterinarians to the positions of inspectors. He ridicules properly the desire of those officials to appear careful of the public funds, and yet squander thousands of pounds in trifling

affairs. He speaks of the greed of the ordinary councillor who asks himself why should the mere doctor get so much "when he—the sapient councillor, makes only perhaps ten times the amount by his astuteness and cunning." And the poor veterinarian has to be satisfied with dog's wages. The medical officer is loaded with a work he is unfit for; the dairy and slaughter-house work is left to some ignorant fellow, political sycophants, parasites, who are by turns servile and insolent, obsequious and threatening. The remedy is simple for this state of affairs. Why not make the meat inspection under the care of the government of the country? For Prof. Williams, this would obviate many difficulties and at once strengthen the government and the veterinary profession.

These questions that have been treated by our two contemporaries are similar in their nature, and will no doubt call the attention and endorsement of the entire profession of England. But, unfortunately, there seems to exist some obstacles in the realization of the desired wishes—that is, if we read well the remarks of the English writers. Those obstacles exist in the Board of Agriculture and Central Chamber of Agriculture. It will be interesting to watch the events.

* * *

A VALUABLE VETERINARY VADE MECUM.—Many of my friends may remember what my objections were against those publications which we would see now and then appear years ago, which in a few hundred pages had the pretention to form almost an encyclopædia of veterinary science, and they will certainly feel surprised at what may appear a complete change of opinion on my part. Perhaps age has made me wiser. At any rate, I must say a few words upon one of those books which has just been issued by Bailliere et fils here, the "*Aide Memoire du Veterinaire*" ("The Vade Mecum of the Veterinarian.")

It is the third edition of an old work revised by Paul Cagny, one of our hardest workers. This vade mecum is a work of 680 pages, with some 328 illustrations, and which is divided into ten chapters, covering the entire field of the practitioner.

Chapter I. treats of general pathology ; the second on the contagious diseases, microbial and parasitic ; the third of internal pathology (diseases of the various apparatuses), poisonings ; the fourth of external pathology—that is, of surgery proper ; the fifth, of operative surgery ; the sixth, of obstetrics ; the seventh, of therapeutics ; the eighth, of sanitary medicine ; the ninth, of meat inspection ; the last or tenth, of veterinary jurisprudence.

It is hard to understand how such a quantity of material could be gathered in such a space, and, above all, in such a manner as to make the contents of any value to the veterinary practitioner, for whom this book is principally destined. And, yet, Mr. Cagny and his collaborator, Mr. Gobert, have succeeded in doing it. The subjects are, of course, treated in a most concise manner, and, yet, in perusing it an enormous quantity of information is found. The memory of the veterinarian is refreshed ; symptoms, treatment ; their new forms, the new applications, etc.—every subject is treated properly and scientifically. The authors have done justice to a hard task, and I have no hesitancy in saying that if I had seen similar works before, I am sure I would not have kicked so much against them. Perhaps, however, the writers of those that I have seen did not succeed as well. I suppose this has also changed since I left New York.

A. L.

OUR NATIONAL CONVENTION AT ST. LOUIS.

The American veterinarian feels a justified pride in the unique and satisfactory position which he occupies in the world of medicine. Thirty years ago there was hardly a basis for a claim that there existed in this country a profession of veterinary medicine. Not that there were not here and there earnest and eminent veterinarians of the higher order working by example and precept for a foothold in public esteem ; but they were so few, and the charlatan so numerous, that it required some assistance from the imagination to regard the qualified men as a profession numerically. What was lacking in numbers, however,

was compensated for in zeal and energy, for the little band of veterinary heroes who formed the nucleus of our present populous and prosperous profession made such an impress upon their times that every veterinarian who loves his calling and is jealous of her unscathed reputation should almost place a halo about their heads. They blazed the way and moulded the sentiment which have guided our footsteps ever since. They laid the foundation upon which they and their pupils have erected the edifice which the profession occupies to-day; and that foundation has for its cornerstone the untiring search for knowledge.

It is true, the same Association which will celebrate its forty-first birthday at St. Louis in August, was almost a dozen years old at the time of which we write; but its membership was small and sectional, and its meetings were more social than scientific. To-day that same organization, bearing a broader title, has spread its influence all over the Western Continent, and has followed the flag into the Hawaiian Islands and the Far East. It no longer confines its membership to the States; it is continental, while scientifically it is truly international. No better illustration of this could be given than is shown by Secretary Repp's outline of the literary programme, as it has developed at this early date, and which is published in this number of the REVIEW, for his essayists come from Germany, France, the Philippine Islands, California, Texas, Colorado, and throughout the United States; and there is little doubt but that our large membership in the Canadian Dominion will be heard from before the books close. With the largest membership of any veterinary organization in the world, representing every phase of scientific endeavor, from the knotty problems of every-day practice to the most complex theoretical propositions of State medicine, it is broad enough and deep enough for every veterinarian in whatever department of medical science he may labor. This Association has led with a gentle and conservative hand the rapidly developing conditions as they have arisen, and it can be relied upon to expand as the demands are imposed upon it. Its great service in developing the educational standard in America

is an instance of its beneficent influence, and it will never rest until the American standard is the standard of the world. Hand in hand with its benefits to its own members it has thrown a cloak of protection around the people of this country by securing for them wise laws protecting the herds and flocks from the ravages of pestilential diseases, and furnished intelligent sanitarians to enforce their provisions. It has demonstrated the wisdom of federal, State, and municipal inspection of animals and their food products, and through the national department of animal industry has given to the world a model that challenges comparison. The distinguished Chief of the Bureau is an honored Ex-President of this Association, and has ever been one of its most earnest and valued members. He has always confided in the membership, and in turn they have given him their loyal support and hearty encouragement; so that the great success which has come to the Bureau is at once a pride and an endorsement of her wisdom and benefits.

And so the story could be continued for more pages than are now at our disposal, but we think enough has been said to show that the road to national veterinary progress is through the combined thought, influence, and exertion of the members of that profession, and that the American Veterinary Medical Association has always proven itself to be worthy of that trust. The REVIEW does not maintain nor believe that in the accomplishment of so much that is good, errors have not been committed; it has no idea that this organization is all that it could be or should be; but it is surely deserving of the coöperation of every veterinarian eligible to membership in it, and we feel that all who have a right to join with it and do not do so are greatly remiss in their obligations to their chosen profession and to their own interests. At Ottawa in 1903 the list of new members far exceeded any previous year, and this record should be eclipsed at St. Louis.

Read the partial programme printed elsewhere; multiply it by two, add a surgical clinic, a pathological exhibit, and many other interesting and instructive features, together with all the

grandeur, glory, and various attractions of the greatest World's Fair ever held, and then decide if your place is not at St. Louis on the 16th, 17th, 18th and 19th of August, 1904.

EPIDEMIC OF TUBERCULOSIS AMONG STREET SWEEPERS.—The *New York Medical Journal* had a long editorial in its issue of May 14 on the alarming increase of consumption among the men who sweep New York's streets. Although they were made to pass a rigid physical examination when appointed, one-third of the force have contracted the white plague. The writer theorizes that this extraordinary condition is produced by the failure to sprinkle the streets before sweeping, which causes so much dust containing the dried sputa of tuberculous humans to be inhaled. The dust, even though it be not loaded with the tubercle bacilli, irritates the lung substance, and prepares the way for the entrance of the tubercle germ into the blood. He points out that these men living in the open air, and starting with a healthy organism, should be free of disease. This is their record in Berlin and other European cities, where the streets are always sprinkled before being swept.

DR. OLOF SCHWARZKOPF, who has done so much in the interests of the Army Veterinarian, through the "Army Veterinary Department" of the REVIEW, is publishing in that section some very valuable articles upon the use of mallein as a diagnostic and curative agent. The splendid opportunity which he took advantage of in the Philippines is graphically described, and the whole constitutes probably the most extensive and valuable contribution to the subject yet presented in any country.

MORE EVIDENCE is presented this month of the efficacy of udder inflation with oxygen as a cure for "milk fever." With the high percentage of recoveries reported from all sections, there is every reason to believe that the proper means for destroying the specific causative agent has been found. It is to be hoped that some active mind may be able to suggest and demonstrate an equally efficient remedy for azoturia.

ORIGINAL ARTICLES.

TERATOLOGY OF THE HYO-MANDIBULAR GILL-SLIT IN THE HORSE.

BY W. L. WILLIAMS, PROFESSOR OF SURGERY AND OBSTETRICS, NEW
YORK STATE VETERINARY COLLEGE.

WITH ORIGINAL DRAWINGS BY CHAS. W. FURLONG, INSTR. INDUSTR.
DRAWING AND ART, SIBLEY COLLEGE, CORNELL UNIVERSITY.

The gill-slits in mammalian animals, instead of opening completely as in fishes, appear as grooves early in embryonic life without communicating with the exterior and instead there arise from the first branchial furrow or groove and its two contiguous visceral arches, the external ear from the outer parts and the Eustachian tube from within, to which latter is added the enormous dependency in the horse known as the guttural pouch.

In the formation of these organs various arrests, or aberrations in development occur with more or less frequency among our domestic animals.

Those most frequently described are:

1. *Fistula colli et auris congenita*, a congenital communication between the pharynx or larynx and the exterior through the external ear or lower down in the parotid region due to a complete opening of the gill-slit. While this aberration has been occasionally observed in children, lambs, pigs and calves we find but one reference (Hoffman) to this condition in the horse.
2. *Culs-de-sac* of the endoderm arising from the inner visceral furrow. Kitt mentions these but relates no specific cases nor do we find any definite records elsewhere.
3. *Endodermal cysts* (congenital hydrocele of the neck) lined by ciliated epithelium, arising from the preceding *culs-de-sac* through the isolation of a segment. Kitt mentions these also without giving cases in point

and we nowhere find anything to indicate the frequency of their occurrence in domestic animals.

4. Epidermal culs-de-sac arising from the first external visceral groove or the two contiguous branchial arches.
5. Epidermal, dermoid, dental, or branchial cysts which are lined with epidermis and contain hair or teeth. They arise from the preceding culs-de-sac by isolation of their distal portions.

We may add to these aberrations :

6. Evaginations of the epiderm in the form of horns.
7. Tympany of the guttural pouches.
8. Osseous outgrowths.

The first three classes of aberrations mentioned, as has already been suggested, are well nigh unknown in the foal and in their stead apparently we have to deal with a not uncommon form of aberration in the guttural pouches which constitutes our class 7.

The Eustachian tubes develop as outgrowths from the pharyngeal endothelium but instead of forming complete tubes in the horse they retain the form of deep, elongated slits opening into the enormous air sacs or guttural pouches which may be viewed in themselves as analogous to class 2 in the above enumeration. Lined with ciliated epithelium and having a capacity of about a pint, these pouches are normally filled with air, the amount of which is increased with each expiration and decreased with each inspiration. The visible evidence of aberration of these sacs consists of a disturbance in their function by which the air within the cavity does not normally escape but accumulating therein causes an abnormal distension of them which is known to veterinarians as *Tympany of the Guttural Pouches*.

This defect generally becomes apparent within a very few days after birth, but in some cases gradually manifests itself during the first four to ten weeks of life. At some time during this period a swelling appears in the parotid region on one or both sides, which gradually increases in size, causing severe dyspnœa

and frequently producing death if not relieved. An examination of the swelling shows it to be highly resonant owing to an accumulation of air in the guttural pouches. The reason for the retention of air has not been satisfactorily explained. Möller ascribes it to the valve at the pharyngeal end of the Eustachian tube acting defectively in such a way as to permit the entrance of air and prevent its exit, which does not seem very clear upon examination of the parts themselves, as the valve opens outward into the pharynx, but it rather appears to the writer from personal observation that the defect is in the formation of the lips of the Eustachian tube within the pouches, the median lip of the tube, or even both, being over-developed in such a way that the air, when the pouch is once filled, presses the two lips together and prevents the air from passing from the sac into the tube and thence into the pharynx. The writer has observed two cases.

The first was a foal two or three days old which was affected with severe dyspnœa and had highly resonant swellings in the parotid regions which contained air and were evacuated by means of a trocar and the dyspnœa relieved. The owner was requested to return the foal in case the pouches refilled, but failed to do so, and the colt died from suffocation two or three days later, without any definite effort to relieve it by surgical operation or any opportunity to examine the foal after death.

The second case of tympany of the guttural pouches which has come under our observation was a bay filly foaled October 10, 1901, of roadster breed, well formed, large and vigorous. According to the owner the foal was normal at the time of birth so far as observed, and continued apparently well until at an age of from sixty to ninety days something peculiar was noted in the left parotid region, which upon examination by the owner consisted merely of an unusual growth of hair so far as he could determine. We have not been able to determine the precise location of these elongated hairs, but they seem to have been in the neighborhood of Viborg's triangle. At about five months of age distinct enlargement in the parotid region was

clearly present and a veterinarian was called who inserted a seton, which probably extended into the air sac. No benefit was derived and a second veterinarian being called removed the seton and applied a blister. Later he suspected an abscess, but failed to locate any pus.

The owner becoming discouraged sent the patient to pasture where she was seldom seen and the swelling increased greatly, producing extreme dyspnœa and emaciation. An abscess finally ruptured into the pharynx and discharging through the nostrils afforded relief; later the discharge gradually ceased and soon after the enlargement returned, accompanied by very severe dyspnœa, which threatened her life.

A third veterinarian being called, the swelling was opened and found to contain air. In making the incision an important vessel was severed which was ligated with heavy silk and, becoming fixed in the tissues, protruded into the guttural pouch and there supplied a constant cause for suppuration. The opening healed occasionally, but this was always followed by a collection of air and pus in the pouch, and the owner habitually opened it whenever the patient was distressed.

When presented on June 24, 1903, the filly was in excellent condition, vigorous and apparently sound in every respect except the left guttural pouch. The left parotid region was much enlarged from the base of the ear downward to the level of the angle of the inferior maxilla and backward along the jugular groove for a distance of from eight to ten inches. The parts had a peculiar, soft, flabby character, which though not œdematous, appeared to be devoid of contractility or elasticity. In the region of Viborg's triangle there was an opening large enough to admit the finger, and with it introduced, the walls could be pushed upward, backward or forward with the greatest facility, and the great vessels of the region, and the hyoid bone distinguished. The Eustachian tube could not be reached. There was a constant discharge of a muco-purulent character, which kept the neighboring parts moist and soiled. Air passed in and out through the opening during respiration. If the

nostrils were forcibly closed during expiration the affected left pouch inflated like a balloon, assuming remarkable proportions, filling the entire angle beneath the ear, extending somewhat forward over the inferior maxilla, downward below its angle and backward along the jugular groove, the inflated pouch standing out beyond the normal dimensions of the neck a distance of from six to eight inches and measuring in an antero-posterior direction about ten to twelve inches. The air would then rush out through the opening with a whistling sound. The size of the pouch under inflation approximated two gallons in capacity. Taking the history and symptoms in conjunction it seems clear to us that the case had originally been one of tympany of the air sac and had been so disturbed by the handling of the attending veterinarians, especially by the insertion of the seton, that the pouch became infected, leading to abscesses, and that thereafter the condition vasculated between tympany, abscess and open fistula of the pouch, according to conditions.

The history of long hairs over the guttural region, shortly after the birth of the foal, is highly suggestive of threatened gill-slit fistula (*fistula colli congenita*) and that the overgrowth of hair indicated a point in the branchial furrow where the air sac had almost or completely opened on the exterior and fused again during embryonic life. The condition at this date was essentially an acquired gill-slit fistula, the congenital condition inviting the slight accident necessary to complete the opening.

Unfortunately we seem to be without information regarding the formation of the guttural pouches during embryonic life, and so we cannot compare the condition here presented with the fistula of the ear and neck in new born animals, but clinical observations are suggestive of analogy between the tympany of the guttural pouches in solid ungulata and the fistula of the ear and neck, or perhaps more correctly with our second class of aberrations, endodermal culs-de-sac, in other mammalia.

On June 30th the animal was placed upon the operating

table on the sound side and the opening into the air sac extended by an incision sufficient to admit the hand. The cavity was of immense proportion, extending backward along the neck and forward on the median and lateral sides of the inferior maxilla and upward to the base of the ear. The lining membrane of the pouch seemed normal throughout, except that at one point the silk suture which we have previously mentioned, as having been used to ligate an artery, protruded into its cavity. Digital exploration of the Eustachian tube gave the impression that it was over-developed, its cartilaginous lips much broader than normal and three fingers could readily be passed into the pharynx.

The condition was new to us and presented a surgical problem not readily solved at the moment. If we enlarged the opening into the pharynx as recommended by Niebuhr, Thomassen and others it seemed to us only to invite the entrance of a larger volume of air into the flaccid pouch, and possibly along with the air, food particles or other foreign matter. Even if it did not have this result the accumulation of air might still continue to a sufficient degree to prevent contraction in the impaired walls of the pouch. It was finally decided to move in the opposite direction and close the Eustachian tube by means of sutures. A pair of dressing forceps were applied to the free borders of the Eustachian tube immediately against the ear bone, and drawing upon these sufficiently to render them tense, a short curved Hagedorn needle armed with a heavy silk thread one metre long was passed through the margins of the two lips and the first suture secured by a slip knot. The forceps were then removed and the lips of the tube kept tense by drawing upon the suture and other continuous sutures applied until the tube was tightly closed throughout its entire length, and the end of the suture secured by passing it beneath the last turn. The external wound was left open and washed antiseptically followed by sponging with tincture of iodine in the hope of destroying the lining membrane and inducing contraction in the walls of the pouch. There was practically no reaction to the

operation and the animal continued to feed as usual. There was still some passage of air through the external opening which seemed to be due to the movements of the median wall of the pouch during respiration and not to any communication between the pharynx and sac. On July 24th, twenty-four days after the operation, the opening was somewhat dilated and the hand passed up to the Eustachian tube, when it was found that the sutures were still in place and the tube closed. No passage of air through the Eustachian tube could be detected, the swelling in the guttural region had greatly diminished and the discharge of mucus had decreased 75 per cent. or more. The patient was dismissed on July 27th, the discharge still decreasing and the enlargement lessening. At this time it was decided to insert a permanent drainage tube to afford an exit for the secretions, but on August 4th the owner advised us that it seemed unnecessary as the discharge had practically ceased. On November 16th the owner reported that the fistula was still open, but that the discharge was merely nominal and that her condition was highly satisfactory.

While these aberrations of the guttural pouch involving the internal groove of the gill-slit are not reported as being very common, they may occur more frequently than is supposed but are not reported either because they soon perish without attendance, or being attended yet perish and failures are too rarely reported by the average practitioner.

The handling of tympany of the guttural pouches has not been placed upon a reliable basis owing probably, more than any other reason, to the fact that one practitioner rarely sees more than a single case, and that perhaps perishes ere he formulates a definite plan for action, and there has not been a rich cumulative experience by which we may make deductions as to the efficacy or otherwise of a given course.

The success or failure of an operation in a single case is not conclusive as to its value since the success or the failure may be due to indirect causes, inoperative in the majority of cases.

The urgency of the symptoms may be temporarily relieved by trocarization, but the pouch quickly refills after withdrawal of the canula.

Möller relates that Stockfleth reports a recovery by the insertion of a seton through the pouch.

Friebel injected 2 per cent. zinc sulphate solution with good results, having first permitted the air to escape.

Niebulir advises opening the guttural pouch and then enlarging the opening of the Eustachian tube into the pharynx by incision.

Cadiot and Almy recommend the opening of the guttural pouch followed by enlargement of the pharyngeal communication by means of incisions.

The guttural pouch opening according to Cadiot and Almy is best made by Dretrich's method.

This has the advantage of a large opening in close proximity to the affected part, but the operator must change his course in order to reach the part after entering the sac. If Viborg's operation is chosen the line of operation is almost directly toward the part, though farther from it.

The theory upon which this operation is based is probably erroneous and instead of leading to a more free exit for the air within the pouch, it seems to us more plausible to believe that the wound of the orifice causes its obliteration like the radical operation for strangulated scrotal hernia in the horse.

If this is true, our operation of suturing the slit tube is identical with it in its ultimate object.

Möller, Cadiot and Almy and others, cite records of suppuration of the guttural pouches induced by the entrance of food through the pharyngeal opening, and if this be correct, the dilation of this orifice as a remedy for tympany of the sac would apparently invite such an occurrence in an undue degree, if the dilation is to remain permanent. But, as we have already indicated, we believe the success of the operation depends upon contraction, if not obliteration of the orifice owing to inflammatory processes as a result of the wound, and, there-

fore, the surgeon might readily be allowed the choice between sutures and other wounds of the part.

Still one other method of operating suggests itself to us without any data as to efficacy.

We have ventured above to express the opinion that the imprisonment of air within the sac is due to excessively developed, flabby Eustachian lips within the pouch and if this be correct, a very natural remedy for the tympany would be the excision of a Ω -shaped piece of the median lip immediately against the pharyngeal orifice.

This should permit the free escape of air without inviting the entrance of food or other foreign bodies if our view is correct and otherwise it again would tend to obliteration of the pharyngeal orifice.

We have no data upon the points at issue, but in all probability a foal successfully operated upon for tympany of the air sacs by any method is rendered deaf. This should be borne in mind when giving a prognosis in cases where both sacs are involved.

While the first, second and third groups of aberrations we have enumerated above, that is, those emanating from the inner or pharyngeal visceral groove or involving a complete opening of the gill-slit are comparatively rare; the fourth, fifth and sixth groups emanating from the epidermal or external layer of the embryo are far more common and are seen almost exclusively in the horse.

Dental cysts about the ear have been recorded, however, in the lamb by Berger-Perriere; in the ox by Gurlt; and in the dog by Verwey.

Veterinary literature in general and English literature in particular upon this topic is chiefly fragmentary in character, although considerable in extent.

The recorded cases relate chiefly to the so-called ear fistulæ, dermoid cysts or ear teeth which we have included in our fifth group, and that relating to the culs-de-sac of the epiderm is generally overlooked, although in all probability they are the far more

numerous group, and are almost if not always present in conjunction with the tooth cyst. We find in veterinary literature comparatively numerous accounts of teeth having been removed from the vicinity of the base of the ear usually from the squamous temporal bone, more rarely from the petrous temporal or other bones. Their origin and significance has not been very clearly explained in our language, and they are frequently recorded as profound mysteries accompanied by such indefinite data as to have no educational value to the reader. They consist frequently of the bare statement that a wonderful tooth has been found in the region of the ear which a veterinarian has succeeded in removing with good results. A few cases are recorded where the surgeon has met with insurmountable difficulties, where the teeth have been unusually large or unfavorably situated. How many more cases have been unsuccessfully operated upon, veterinary readers probably do not know.

Since 1896 a series of highly interesting cases have entered our surgical clinic which serve to illustrate unusually well the embryologic aberrations in this region, largely because they constitute an almost unbroken chain in their degree of development.

Case 1.—A five-year-old gray roadster gelding entered the clinic on March 12, 1897, because of a discharge from the anterior or internal border of the concha about midway from its base to its apex. The hair in the region was kept moist and matted together by a mucus-like discharge from a narrow opening through which a probe could be passed downward on the external side of the cartilage toward the squamous temporal bone for a distance of 5 c.m., where it ended blindly. There was no swelling nor tenderness and no visible disease of any character, and, so far as could be learned, the channel had been present from the time of birth. The skin was divided longitudinally the full length of the channel, after which the tube was dissected out and excised. It was not adherent to the conchal cartilage nor to the skin at any point except at the mouth, where it was continuous with the epidermis, and passed imper-

ceptibly into it. At this upper part it was lined with pigmented epidermis while lower down in the deeper parts the lining had the appearance of ordinary mucous membrane. It ended below as a cul-de-sac and contained no tooth substance.

Case 2.—A five-year-old bay gelding presented January 9, 1902, showed similar malformation to the preceding in the same location with the history that it was present at the time of birth. The channel was approximately of the same dimensions as the preceding, extended in the same direction, had the same relations to the skin and the cartilage, contained no tooth substance and was dissected out in the same manner.

Cases 3 and 4 consisted of a pair of roadster animals, one a gelding, the other a mare, aged six and seven respectively, and were brother and sister. Presented at the clinic on November 17, 1898, one of them showed a cul-de-sac on each ear, the other upon one ear only. All three of these were located on the anterior or inner margin of the conchal cartilage, and extended obliquely down between the skin and cartilage toward the squamous temporal bone. The hairs about the mouths of the channels were matted together, the parts were without tenderness, and gave no inconvenience to the animal. They were observed at the time of birth and had undergone no change subsequently. They were removed by the method already described in the preceding cases and neither of them contained any tooth substance. The general appearance of two of these are shown in Figs. 1 and 2, Plate I. In Fig. 1 we observe a short round cul-de-sac with a broad mouth, the length of the specimen being 4.5 c.m. from the base to the top of the horny appendage, its width 2 c.m. and the sac 2.5 c.m. deep.

The sac is filled with dark-colored sebum and is lined with black epithelium studded with short, fine hairs. There is no appearance of mucous membrane and no suggestion of any tooth substance. In Fig. 2 we have a very much more elongated sac which has been turned inside out in order to represent the appearance of the inner membrane. Near its mouth the tube appears to be lined with deeply pigmented epithelium continu-

ous with the skin which gradually becomes paler toward the lower end and finally assumes the general appearance of a mucous membrane showing numerous small openings suggestive of the mouths of glands.

Case 5.—A two-year-old filly presenting an opening on the internal border of the concha about midway between the base and apex from which there was a mucus-like discharge which matted the hairs below the orifice. It had been present from birth and no changes had been noted. A sound could be passed down the channel between the skin and conchal cartilage toward the squamous temporal bone for a distance of 7 c.m. where it ended upon a hard, but not naked object. There was no sensitiveness in the parts, no swelling, no odor to the discharge nor any other symptom of disease process. Projecting upward from the squamous temporal bone there was a hard firm body, Fig. 3, Plate I, somewhat cylindrical in form, 4 c.m. long by 1 c.m. in diameter, and ending against the blind end of the above described channel. This body appeared somewhat movable but was not tender and the colt showed no resistance to its being handled. We were convinced from external appearances that we had one of the mysterious ear teeth to deal with.

We dissected out and removed the cul-de-sac in the same manner as in the preceding cases, but when this had been completed and we had reached the firm body we found it presenting all the characters of ordinary bone and had to be dissected away from the surrounding tissues which were intimately adherent at every part. When the base was reached the hard body was found to be rather loosely attached to the squamous temporal at the beginning of the orbital process as if by an imperfect articulation which would remind one of that between a rib and its cartilage. When removed, the object seemed an ordinary piece of bone which is delineated in Figs. 3 and 4, Plate I. No substance was found in this region which could be clinically identified as tooth tissue.

Case 6.—A five-month-old bay colt in good condition and

well developed was presented at the clinic October 10, 1903, with the history that at the time of birth the owner had noticed an enlargement on the external side of the median or anterior border of each ear. After a few days he noticed also that there was a discharge from the superior portion of each swelling which had the appearance of mucus.

Upon examination we found on the outer side of the anterior or median border of each concha, passing obliquely downward and toward the squamous temporal bone a somewhat thickened, firm swelling between the skin and conchal cartilage, but attached to neither. The swelling originated at about the middle of the anterior border of the concha, F, Plate II, and extended downward a distance of 5 c. m. At the upper extremity of this enlargement there was an opening from which mucus discharged and which readily admitted a large probe for a distance of 5 c.m. where it stopped against soft tissues. Just beyond the end of this channel at the commencement of the orbital process of the temporal bone, a rounded enlargement projected up toward the channel for a distance of 2 c. m. with a transverse diameter of 2.5 c.m. There was no sensitiveness, suppuration or inflammation in the parts so far as could be determined.

The patient was secured upon the operating table and the areas involved shaved and disinfected and the skin anæsthetized. The two channels were dissected out and removed in the manner already cited in the preceding cases. Just beyond the bottom of the channel we came upon the hard swelling which, when cut upon, proved to be bone apparently normal in character in which no opening could be found at the time. After dissecting the soft tissues away from the bony protuberance on the right side and holding them aside with retractors, the bony eminence was grasped with tooth forceps and readily broken off, taking with it a piece of tooth tissue, but leaving the body of a tooth imbedded in the substance of the squamous temporal bone. The overhanging portions of bone were carefully chiselled away exposing the entire tooth to view which was readily pried out of its place and removed.

In case of the left tooth, which was found to be much larger, the bony covering was chiselled away at once and the tooth crown fully exposed, but we were unable to dislodge it by means of the gouge used as a lever or by the punch after dealing a number of moderate blows with the mallet. A bone chisel was then placed against the tooth crown, so directed that the impact upon it would be from within to without and from behind to before, and with a few sharp taps from the mallet the tooth was split longitudinally for its entire length, which served to detach it from its alveolus. The two halves were then readily lifted out.

The alveoli were packed with iodoform gauze and the wounds closed by continuous sutures as indicated in Plate II. On October 12th the dressing was removed, the wounds appeared to be doing perfectly, were dressed antiseptically and the patient discharged.

Case 7.—An eight-year-old chestnut roadster gelding was presented at the clinic on December 9, 1897 with a fistulous opening in the right squamous temporal region. The history given was, that five years previously a colleague had removed from the same place a moderate sized tooth, after which the part had not healed. A fistulous opening existed from which pus was constantly discharged, and into which a probe could be passed 2 or 3 c.m., where it stopped against the naked surface of a tooth. The fistulous opening was freely dilated by incision and the broken crown of a large molar tooth exposed to view, and was more completely bared by chiselling away overhanging projections of bone. An attempt was made to loosen the tooth with the aid of the punch and mallet, but it broke off and an irregular shaped piece 4 x 5 c.m. in size was removed. Having worked for more than an hour and the body of the tooth being still firmly imbedded, further effort was abandoned at the owner's request. On December 10th a second piece of tooth 3 x 4 c.m. was broken off with the punch and mallet, and the main body of the tooth being still firmly imbedded, further operation was abandoned and the animal was discharged. The

wound did not heal, but it gave the animal no particular inconvenience and he was continued at his work for about three years, when he died from other causes and the head was sent to the college.

On examination of the skull, Plate IV, there is seen in the right temporal region a broken molar crown, Fig. 3 D', partially covered over by outgrowths of the squamous temporal bone which occurred since our operation. The direction of the tooth is downward and forward, passing closely beneath the maxillary articulation at ST, Fig. 2, in front of the *foramen lacerum basis cranii* at a distance varying from .5 to 1 c.m. from its border, and ending in the wing of the sphenoid bone. A portion of the fang penetrates the cranial cavity at D, Fig. 1, where during life it had been in contact with the meninges of the brain, while the end of the fang was in close proximity to the superior maxillary division of the trifacial nerve from which it presumably had had its innervation. There is a distinct inward displacement of the parietal and sphenoid bones into the cranial cavity corresponding to the area occupied by the tooth.

This series of cases has presented rather unusual opportunities for careful study, and serves as a foundation upon which to base some conclusions as to the source of origin and mode of formation of these peculiar aberrations and permit us to formulate a general plan for their surgical handling.

The nomenclature of this peculiar group of aberrations is very loosely defined. The various members of the group are indiscriminately known as branchial tooth cysts, branchial odontomes, dentigerous cysts, ear cysts, mucous cysts, ear fistulæ, dermoid cysts, etc. As a general rule neither of these designations is at all appropriate. In the series of cases to which we have alluded, but two of them contained anything which could properly be designated as either a cyst or a fistula. Number 6, below GD had two cysts, or closed sacs in each of which a tooth, D, existed, and Case 7 had a fistulous opening, constituting a communication between a deep-seated diseased part and the body

surface through which pathological products escaped. In the other cases, as well as in Number 6, we had to deal with elongated channels or culs-de-sac, from the walls of which a sebaceous or mucous substance was excreted and discharged, but in which no pathologic changes were taking place. If we define a cyst as a *closed sac*, we find among six cases having together eight aberrations only two cysts; and if we define fistula as *an elongated, narrow channel of communication between the exterior and a deep-seated necrotic or otherwise diseased area* through which diseased products are discharged, only Case 6 showed a fistula.

We must admit that in this series of seven cases, at least six of them were plainly congenital and presented no diseased condition, and reasoning from these we feel warranted in concluding that the seventh had had the same origin, but that its history had been interrupted by accident, which led to a pathological state.

The occurrence of simple dermoid cysts, without teeth, in this region has not been observed by us, but is indefinitely mentioned by Kitt and others without describing an individual case. They doubtless occur and might readily arise in such a case as that illustrated in Fig. 2, Plate I, had the mouth of the cul-de-sac become obliterated, isolating the invaginated epiderm.

There are no data to indicate that teeth ever form in these culs-de-sac or in cysts emanating from these, except they sink into the bone and the bony plates close over the engaged part as shown at ST' and ST'' in Plate III, by which means the lower extremity of the cul-de-sac is isolated and becomes a cyst with bony walls (adventitious dental alveolus) and in these, teeth seem to develop uniformly, though possibly they may become blighted as may have occurred in Case 5, Figs. 3 and 4, Plate I.

Neither do we find any recorded data to show that the dental cysts occur without the presence, or traces of the epidermal canal having its mouth at some point along the conchal border. Plenty of cases of ear teeth are recorded without any mention

having been made of the existence of the cul-de-sac opening on the conchal margin ; but this proves little, since in many of the cases a pathologic fistula has become established when the case first came under observation and the existence of the surgically less important epidermal channel might have been readily overlooked, or it may have been surgically destroyed ; and it is quite within the range of probabilities that in some cases the entire culs-de-sac, except the portion imprisoned within the bone, become obliterated during embryonic development, and thus leave isolated tooth cysts with small vestiges of the original invaginations to indicate the source and mode of origin.

The precise point and manner of origin of these defects and the relationship existing between the individual members of the group have not been very clearly shown, which renders the series of cases here sketched of unusual interest in that they present a practically unbroken chain in manner and degree of development and furnish, so far as we know, two hitherto unrecorded links in the horns of Fig. 1, Plate I, and the elongated bone, Figs. 3 and 4, Plate I, and at the same time strongly suggest the principal point of origin and chief features in development.

Kitt regards such formations as we have illustrated in Figs. 1 and 2, Plate I, as fistula consisting of diverticuli of the skin due to some amniotic defect in the region of the visceral groove which may or may not bear teeth.

Cadiot and Almy regard them as anomalies in the part and as consisting of common dermoid, and of dental cysts. They speak of them as being noticed early in life during the period of dentition. Nothing very definite is ventured as to the point of origin, and their one illustration shows a fistulous opening in the region of the squamous temporal bone at the same point as D', Fig. 3, Plate IV.

Cadiot treats the subject somewhat more fully and says on page 4 of Dollar's translation "Dentigerous cysts in the temporal region usually appear during the first few years of life—in fact, during the period of dentition. At first the dentigerous

cyst consists of a soft swelling flattened or hemispherical, painless, or slightly sensitive, varying in size from that of a nut to an egg. Sometimes it persists for long in this condition; in other cases—and this is the more common—the skin ulcerates toward the centre, or at some point of its surface, the contents of the cysts escape, and a sinus is formed. As a rule, the opening of the sinus is at the side of the cranium, a little in front of or an inch or so from the base of the ear,—occasionally, however, on a level with the scutiform cartilage; sometimes it is a little further forward, sometimes nearer the middle line or the zygomatic process; occasionally it is situated at the base of, or more or less high upon the free portion of the ear. In Rodet's and several other cases the sinuses, though opening up some distance on the conchal cartilage, had originated from somewhere near the zygomatic process."

Möller (Dollar's translation) says: "Fistulæ are sometimes seen in the horse at the base and sometimes near the base of the cartilage, extending downward toward the malar (the original text says squamous temporal) bone for the distance of 1 to 1½ inches. A little serous fluid discharges on pressure. On introducing a probe, a hard body may be discovered on the bottom of the channel which, if the latter be laid open, will be recognized as of the nature of a tooth. Strictly speaking, the condition is not a fistula, but represents the remainder of the incompletely developed branchial arch. . . . The dental furrow which occurs in this portion of the embryonic apparatus results from a primitive fold of the buccal epithelium, which, as in the jaw, can produce enamel."

Since the pharyngeal epithelium and that of the inner branchial furrow are derived from the endoderm, we fail to understand how Möller can compare it to the buccal epithelium derived from the epiderm of the stomatodæum which gives rise to the teeth in the dental alveoli.

On the other hand, the "ear teeth" and culs-de-sac are derived from the epiderm in a manner essentially like the origin of the normal teeth in the mouth. Hoffman, Kitt and Cadiot

et Almy give us the clearest accounts regarding the method of formation of these defects.

If we turn now to a study of the cases which have been outlined, we find in Nos. 1 to 4 inclusive, Plate I, Figs. 1 and 2, apparently simple invaginations of the epithelial layer of the embryo, still continuous with it, which were present at birth, contained no teeth and underwent no changes during the period they were left undisturbed in their position. In Cases 3 and 4, Fig. 1, Plate I, represents the most primitive form of invagination of the external layer of the embryo, the channel being very short forming an oval pouch, A, 2.5 c.m. deep, lined with hair, with pigmented epithelium, and secreting a black sebum. Above the mouth of the infundibulum are two horny growths; C, being in the form of a miniature ram's horn while still above it at C' is an erect horn somewhat larger. The tendency to the formation of horn at the upper side of these openings is observable in some other specimens in our collection, but not so evident as is here shown.

Fig. 2, Plate I, advances us a step in our series. In this illustration the channel has been turned inside out in order to show its gross structure. It will be seen that it is nearly three times the length of Fig. 1 and it offers an interesting advance in regard to its character. While at its superior part it is like Fig. 1, it changes in character toward the base, acquiring the general features of mucous membrane.

Coming now to Case 5, illustrated by Figs. 3 and 4, Plate I, we meet with another stage in the development of the aberrations. In this case we found an elongated channel like Fig. 2, which had its cutaneous opening about one-half of the distance from the base of the concha at approximately the point indicated by the upper dotted line F, Plate II, and extended downward to about the lower branch of the same dotted line. Here it ended blindly and thus far corresponded with Figs. 1 and 2, but just beneath we came upon the piece of bone already described and shown in Figs. 3 and 4. This bony mass is irregularly cylindrical, 4 c.m. long by 1 c.m. thick and somewhat

PLATE I

Figs. 1-2. Culs-de-sac from Cases 3-4. Culs-de-sac; C, Horns surmounting mouth of cul-de-sac. At lower extremity of Fig. 2, stomata are shown apparently the mouths of mucous glands.

Figs. 3-4. Horn from Case 5. D, small stomatode pore of bone.

Fig. 5. Left ear of human embryo, estimated at 35 days. (From His) x 20. Copied from "Matahal's Vertebrate Embryology," by permission of G. P. Putnam's Sons.

1. tuberculum anticum, 2. tuberculum anticum bellum, 3. tuberculum intermedium bellum, 4. tuberculum intermedium bellum, 5. tuberculum lobatum.

PLATE I.

Figs. 1-2. Culs-de-sac from Cases 3-4. A, Cul-de-sac; C, C', Horns surmounting mouth of cul-de-sac.

At lower extremity of Fig. 2, stomata are shown, apparently the mouths of mucous glands.

Figs. 3-4. Bone from Case 5. O, small, detachable piece of bone.

Fig. 5. Left ear of human embryo, estimated at 35 days. (From His.) x 20. Copied from "Marshall's Vertebrate Embryology," by permission of G. P. Putnam's Sons.

1, tuberculum tragicum. 2, tuberculum anterius heliciis. 3, tuberculum intermedium heliciis. 4, tuberculum antheliciis. 5, tuberculum anti-tragicum. 6, tuberculum lobulare.

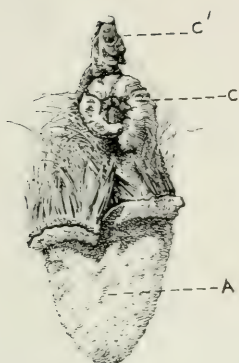


FIG. I.



FIG. II.



FIG. III.

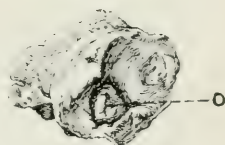


FIG. IV.



FIG. V.

PLATE II.

Head of Case 6, drawn from life after operation.

F. Sutured incision from which epidermal cul-de-sac has been removed ;

T, Tampon in tooth alveolus ;

A, Site of operation on left ear.



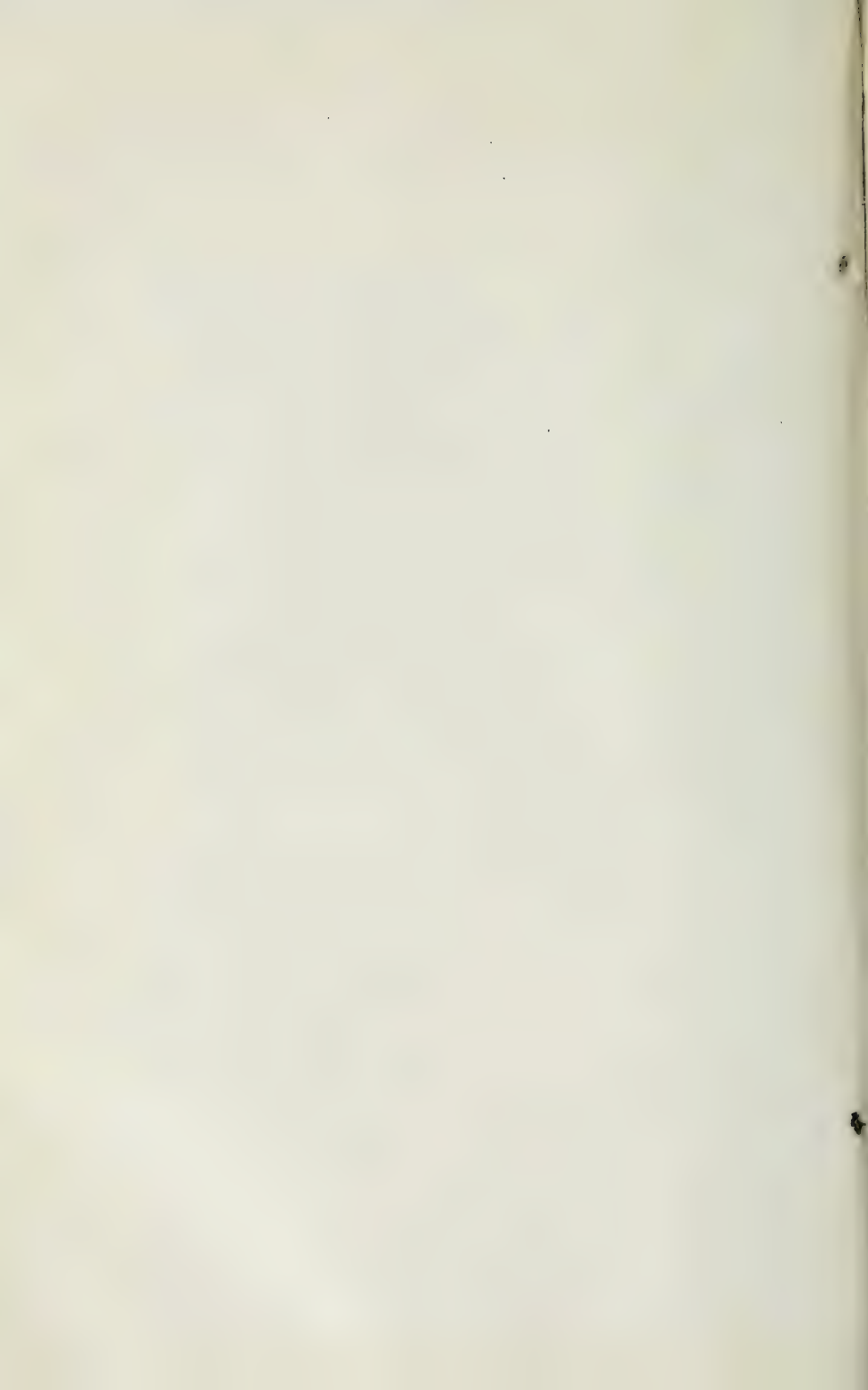


PLATE III.

Cranium of Case 6, with cul-de-sac and tooth in position. Parts lettered O, FW, EC, GD, ST', ST'' and D are drawn from actual specimens taken from Case 6; the other parts are diagrammatic.

O, Mouth of cul-de-sac or epidermal canal EC;

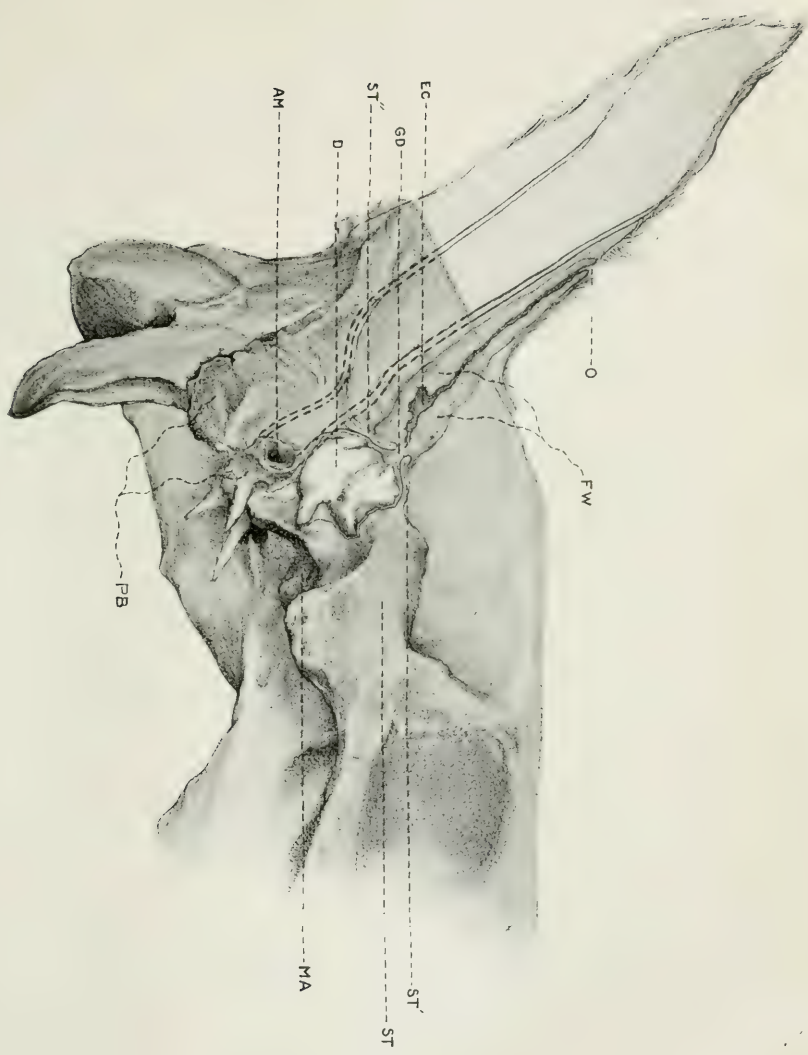
FW, Fibrous walls surrounding the epidermal cul-de-sac;

GD, Gubernaculum dentis or fibrous pedicle where the cul-de-sac has been obliterated by the approach of the bony plates ST', ST'', from the squamous temporal bone ST, resulting in a closed follicle beyond, in which a tooth, D, has developed;

AM, Auditory meatus;

PB, Petrous temporal bone;

MA, Maxillary articulation.



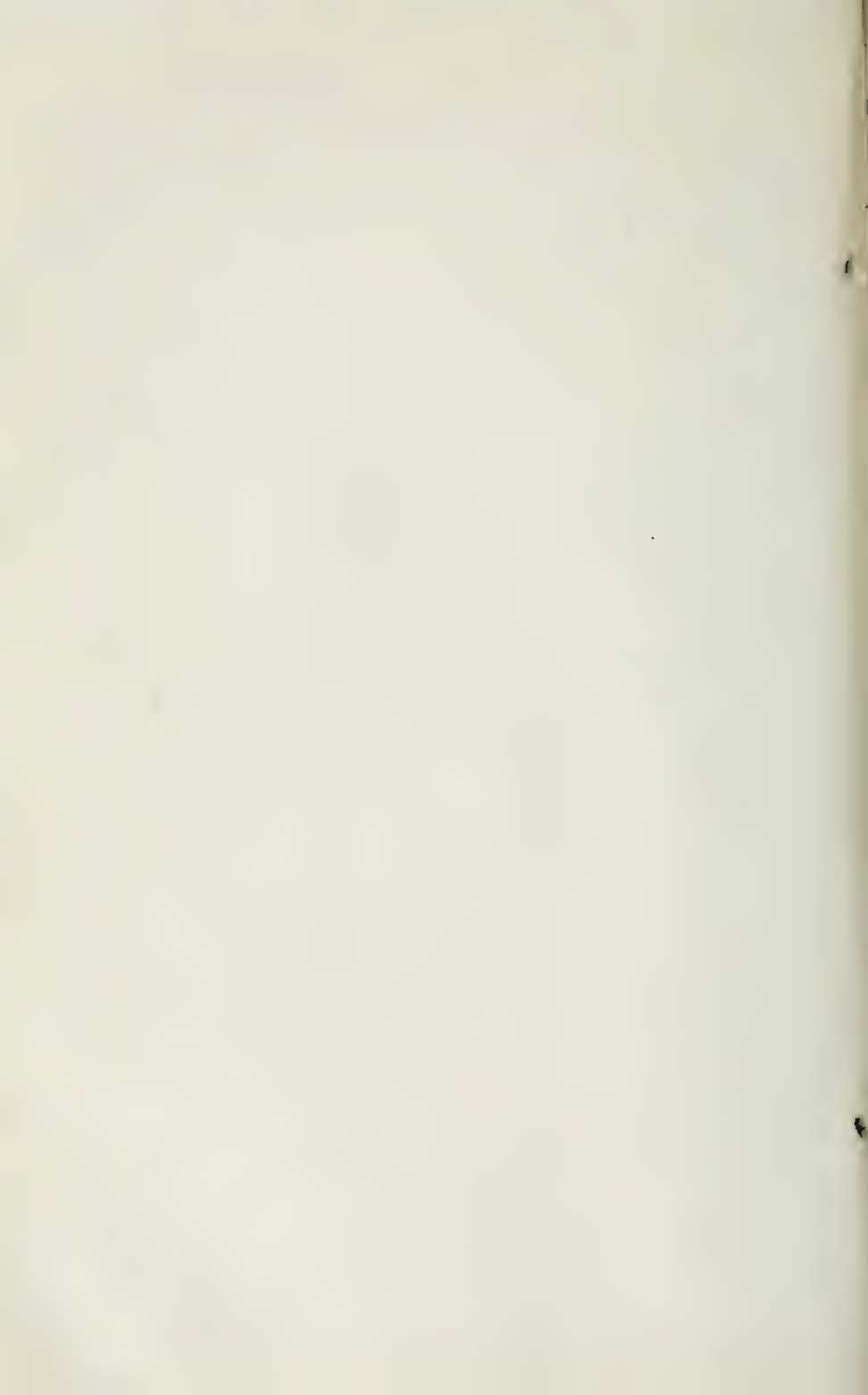


PLATE IV.

Right half of cranium from Case 7, showing —

Fig. 1. Median view. CC, Cranial cavity; L, Lateral process projecting into CC; NC, Neural canal; PB, Petrous process of temporal bone.

Fig. 2. Lateral view. ST, Squamous part of temporal bone; S, Sphenoid bone; T, Troughing seen as in Fig. 1.

Fig. 3. Internal view of frontal tooth crown through integument, showing thin plate of bone which since the last operation had separated from the upper part of the frontal bone.

Fig. 4. Internal view of temporal bone at point of fracture, showing an elevation of the anterior surface of the bone.

Fig. 5. Result of injury in operation; O, Occipital base; S, Sphenoid bone.

PLATE IV.

Right half of cranium from Case 7, showing "ear tooth."

Fig. 1. Median view. CC, Cranial cavity; D, Tooth fang projecting into CC; NC, Neural canal; PB, Petrous temporal bone.

Fig. 2. Oblique lateral view. ST, Squamous temporal bone; S, Sphenoid bone. Other lettering same as Fig. 1.

Fig. 3. Lateral view. D', Broken tooth crown showing through irregular openings in a thin plate of bone which formed since the last operation and emanates from the squamous temporal bone; D, Tooth; PB, Petrous temporal bone at auditory meatus with an exostosis showing on its anterior surface, the result of injury in operation; O, Occipital base; S, Sphenoid bone.



FIG. I.

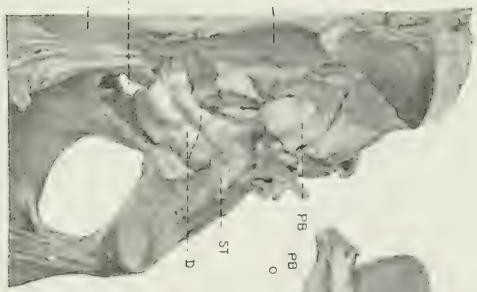


FIG. II.

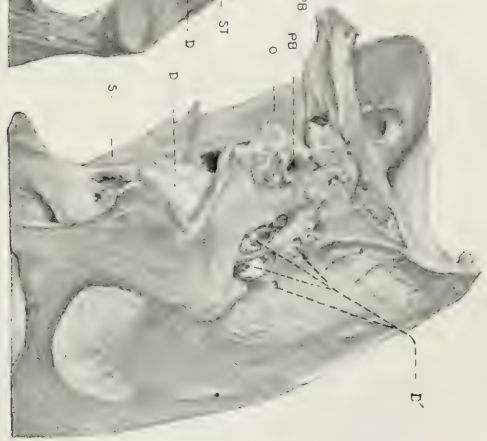


FIG. III.

true tooth fistula. The interpretations of the findings may vary, but we feel that the only proper way is by analogy. The animal came under our observation at eight years of age, with no history beyond the bare fact that at the age of three years a tooth had been removed from the vicinity indicated by D', at Fig. 1, Plate IV. We have no definite evidence of the existence of a dermal canal like EC, Plate III, nor of a bony arch of the tooth like ST', ST'', nor of the fibrous connection, or gubernaculum dentis, GD, but the absence of these can have comparatively little weight as they may have been, nay, almost certainly were destroyed in the first operation, or became obliterated during intra-uterine life. The fistula as found existing might have taken place by a necrotic process acting upon the tissues at the point ST', Plate III, or possibly through surgical interference the tooth crown was laid bare.

If we attempt to draw some conclusion as to the nature of these aberrations and mode of formation it seems to us clear that they have occurred early in embryonic life, and are perhaps in some way connected with definite features in the development of the concha, since in all the cases we have cited where the history is complete the condition has existed at the time of birth, and the cul-de-sac opened upon the conchal border, nor can we find any cases in veterinary literature which would clearly indicate otherwise. Unfortunately we are unable to find any data regarding the development of the concha in the embryo of the horse, nor do we find anything definite in this respect in any mammalian animal, save in man. Turning to human embryology as our only available source of information we find in the ear of the human embryo at an estimated age of thirty-five days a series of tubercles arising from the first and second branchial arches, and separated from each other by more or less deep clefts. At these points of depression the ectoderm dips down for some distance and we may readily imagine, how, while these tubercles are growing upward to form the various parts of the concha, the depressions of the ectoderm might readily invaginate and, while the concha is growing upward pass

deeper and deeper into the tissues. If we examine the ear of the human embryo, Plate I, Fig. 5, we find that the most prominent cleft exists between the tubercles marked 1 and 2, while the clefts between the others are far less marked. Assuming that a like condition prevails in the embryo of the horse we should expect that if invaginations of the ectoderm were to occur they would most frequently take place between 1 and 2, and in such case their normal direction would be downward and forward and their ultimate destiny the squamous temporal region or beyond. This coincides remarkably with the clinical evidence which we have adduced. In our seven cases we have been able to trace the ectodermal invagination in each except one, and the aberrations being double in two cases gives us a total of eight traceable invaginations out of nine aberrations. Of these eight invaginations our records show that all of them proceeded from the internal or anterior border of the concha immediately opposite to a marked ridge within the ear which corresponds, as nearly as we can determine, to the line of demarcation between the tragus and helix, 1 and 2, Fig. 5, Plate I. An extended search in veterinary literature shows these observations to be in harmony with that of others and that in nearly all instances they take place at the point which we have indicated, while a few scattering cases have occurred at other places on the conchal margin. Scant attention has been paid to the culs-de-sac lined with epidermal tissue, as they have apparently been deemed of little significance. When, however, we seek to explain the existence of teeth in this region they become of primary importance.

Turning again to our series of cases we find in Fig. 1, Plate I at C and C', evaginations or outgrowths from the ectoderm constituting horns, while just beneath them an invagination occurs, the outside of which is shown at A. These horns are of interest to us because they emphasize the evidence of a disturbance of the external layer of the embryo at the point indicated and constitute a kind of compensatorial aberration, an evagination and invagination occurring at the same spot.

Passing next to Figs. 3 and 4, as already related, there existed a dermal canal similar in length to Fig. 2, but its cavity was very much narrowed and merely admitted an ordinary probe, then closed blindly at the bottom and was continued by a dense connective tissue cord to the bone shown in Fig. 3. The origin of this elongated bone is not perfectly clear, but it is evident that it was intimately associated with the invagination of the ectoderm already described. It may have arisen from an ossification of the fibrous wall of the epithelial canal, such as would be the case were the parts marked FW, Plate III, to become osseous for say one-half the distance from GD to O, the other half of the invagination with its outlet upon the concha at O remaining open. Or perhaps the cul-de-sac had reached down into the tissues which were ultimately to produce the squamous temporal bone and becoming intimately engaged in them, a portion was dragged upward by the tension exerted upon the cul-de-sac by the upward growth of the concha, such as might occur had the plates of bone ST', ST'', Plate III, been drawn upward by FW.

The small detached piece of hard tissue shown at O, Figs. 3 and 4, may be a second outgrowth from the squamous temporal bone, or the residue of a blighted tooth follicle.

The final step in the series of aberrations is delineated in Plates II and III. Here we meet with conditions bearing a close analogy to the formation of teeth in their normal alveoli. At O, Plate III, and the upper line of F, Plate II, an invagination of the ectoderm has occurred which has ranged obliquely downward and forward until it has passed into the temporal region and invaded the embryonic tissues which later formed the squamous temporal bone. The period in embryonic life at which the invagination delineated here took place, is not easily determined, but it probably occurred between the thirtieth and fortieth days after impregnation, at a time when all the tissues were very soft and the concha was just beginning to form. In such a case that portion of the invaginated ectoderm which had passed so deeply into the tissues as to be ultimately isolated

from the upper part of the canal by the outgrowths of the squamous temporal bone, ST', ST'', would become a tooth follicle, and there would probably persist in most cases, as has in this one, a connecting cord of fibrous tissue, GD, analogous to the gubernaculum dentis of normal dentition. The extent of the tooth would then depend largely upon the degree of further invagination of the ectoderm and it might project in various directions, but the natural tendency would be for the fang to pass downward and inward, while the crown presented upward in the general direction of the original point of invagination, O. The tooth germ may split up into several parts and produce two or more teeth, which owing to the confined space are likely to project in variable directions because of the resistance offered by the surrounding parts. Or there might develop, and probably does, a condition analogous to premolar dentition, there being a "temporary" and "permanent" tooth. If the invagination should take place in the cleft between the two tubercles of the embryonic ear marked 1 and 6, it would tend to range downward and the tooth follicle develop in the petrous temporal bone, as has been somewhat indefinitely recorded by some observers. Should it form higher up along the posterior border of the cartilage and range somewhat backward, it would incline to invade the cranial bones near the temporo-parietal suture and cause the development of the tooth or teeth in this location, as is well illustrated in the very interesting case recorded by Professor Dewar in the *Journal of Comparative Pathology and Therapeutics*, Vol. 16, p. 127.

As already remarked, there was but one true fistula in all the cases which we have noted, and we do not know how that came about. So far as we have been able to find in veterinary literature, there is no evidence to show that a fistula ever occurs except as the result of surgical interference or accidental violence, and it may well be doubted if they occur otherwise. It might be claimed that in such a tooth as in D, Plate III, it would eventually erupt in the direction of least resistance and appear upon the surface, but we have no record of any of these

teeth having ever projected up through the skin, but on the contrary, when there is any communication with the exterior, it is through a more or less extended fistulous opening. If internal causes led to the fistula we should expect the tooth to project up against and eventually through the skin, but no such records occur. Some writers would apparently have us believe that the tooth follicle might communicate directly with the open ectodermal canal, but it seems incredible for the tooth to form without the continuity of the canal having first been interrupted, forming a closed sac to constitute the tooth follicle, and it would be unreasonable to assume that after the formation of the tooth the follicle would probably rupture into the epidermal canal in a case like Plate III and escape of its contents take place through EC at O. In the cases recorded, where the statement is made that a fistulous opening extended from the margin of the cartilage down into the temporal bone where a sound would strike against a tooth, the data are so indefinite as to render them of little value. In Plate III, for example, the probe was readily inserted at O and passed along the canal EC down to the gubernaculum dentis, GD, and there we might say, projected against the tooth, but soft tissues intervened between them and the tooth follicle was closed.

Perhaps the cases which are recorded as teeth having fistulous openings well up on the border of the concha were of the same character as that shown in Plates II and III, in which no true fistula was present.

If the fistula is caused by either surgical interference or by external violence, the tooth being located in the squamous temporal bone, it would be generally below and anterior to the base of the ear, as is well shown in *Traite de Therapeutique Chirurgicale des Animaux Domestiques* by Cadiot and Almy, on p. 19, in which case the opening of the fistula corresponds exactly to D', Fig. 3, Plate IV. As a general rule these teeth project considerably above the surrounding surface producing a marked eminence which may be injured in the movements of the animal by striking against obstacles, or when put to work may be con-

stantly irritated by the pressure of the brow band of the bridle which would tend to finally lead to infection with the formation of an abscess and the eventual production of a permanent fistula. A few cases are related where the fistulous opening occurred inside the concha, but the data are insufficient to determine whether the ectodermal invagination occurred inside the concha or whether the invagination was outside the concha and the abscess taking place within the follicle ruptured inside the concha. We are inclined to the latter view.

The symptoms of these aberrations are very distinct and whenever we find an opening at any point upon the border of the concha discharging a sebaceous or mucous substance, unaccompanied by inflammation or sensitiveness, and find that a probe may be passed for some distance through the opening downward toward the cranium, we are warranted in diagnosing an invagination of the ectoderm which has taken place in early embryonic life. The presence of this invagination should always arouse our interest and cause us to look further, just beyond the blind end of this canal, for a more or less well-marked eminence consisting of bone as in Case 5, or usually of tooth arched over by a plate of bone as described in Case 6. These conditions we usually meet with in young animals, and the parts have not undergone surgical interference. In other cases we meet with a true fistula which is generally before, rarely behind, the ear and through which a probe may be passed for a variable distance where it strikes against a naked tooth. The presumptive evidence always when meeting with a true fistulous opening about the ear is that it is due to the existence of a tooth. While in Case 7, the tooth fang rested against the base of the brain, and the cranium throughout the course of the tooth was somewhat bulged inward and although the inner plate of the parietal adjacent to the broken tooth crown had undergone rarefying otitis as a result of mechanical violence, no brain symptoms appeared so far as we have learned. In still more pronounced cases of bulging of the teeth into the cranial cavity such as are figured by Cadiot et Almy, Dewar and others, it ap-

pears that the displacement of the brain has produced no symptoms of cerebral affection except when through surgical interference purulent meningitis has been induced or sudden pressure upon the brain has caused instant death.

Ridler and Hobday record a case in which a suppurating tooth cyst caused partial facial paralysis, difficult mastication and emaciation.

The method of handling the aberrations which we have noted is a comparatively simple matter in Cases 1 to 5, inclusive.

In dealing with the simple invagination of the ectoderm, the only problem presented is the total removal of the cul-de-sac. This is best accomplished by introducing a sound through the external opening to the closed end of the canal, making a longitudinal incision throughout its length through the skin but not into the canal, and then using the sound as a guide, dissect out completely the canal and remove it. The wound may then be closed by means of sutures to suit the operator's taste. The work should be done under proper antiseptic precautions, and the handling afterward should be on the same principles. The inexperienced should be warned against attempting to destroy these by slitting them open, an attempt which might readily be made were we to accept the condition as one of fistula, by which name it is so commonly and erroneously known. While the slitting opens the canal at the time it has no effect upon the epithelial lining, and consequently the wound heals and restores the original relation of the parts. It is likewise inadvisable to destroy them by irritant injections, because in order to be effective they must be sufficiently powerful to destroy the external skin and as a rule will require frequent repetition which, even if finally successful, annoys the animal and tends to render it irritable about the head.

In Case 5 the same rule applies to the ectodermal canal, while in a similar manner the skin covering the adventitious bone needs to be incised and the projecting bone broken off and removed.

Thus far we regard the operations as belonging to minor surgery with a uniformly favorable prognosis.

When we meet with teeth imbedded in the cranial bones the prognosis and method of handling assume a wholly different aspect, and require judgment and caution on the part of the surgeon. The prognosis must primarily depend upon the location, form and direction of the tooth. Some are perfectly operable, and the prognosis highly favorable, while other cases are totally inoperable, and any determined attempt at operation inevitably causes the animal's death. Between these two extremes we perhaps have every gradation, but curiously enough the intermediary cases have not been reported so far as we can find. For example, Case 6, was perfectly operable and the prognosis highly satisfactory, while Case 7, virtually passes beyond the realm of practical surgery. We find scattered here and there in current literature many cases of these teeth which have been successfully removed by practitioners, but they have been suspiciously quiet in relation to the exceptional cases where operation was impracticable, so that we are compelled to rely almost wholly upon reports emanating from college clinics, for the cases which cannot be successfully operated upon. Fortunately the few reports of such cases afford us interesting details from both an embryological and clinical standpoint to afford us a fair basis for arriving at conclusions in given cases. If we study Case 7, in Plate IV, we find a tooth, the crown of which at D', has been twice broken off while the fang is still 9 c.m. in length and extends from the superior border of the squamous temporal bone D', Fig. 3, downward and forward between the maxillary articulation and the cranial cavity until it reaches the wing of the sphenoid bone and ends by projecting into the cranial cavity against the dura mater at D, in Fig. 1. By observing the position of this tooth, D, Figs. 2 and 3 with the squamous temporal and wing of the sphenoid cut away, it will be seen that it lay nearer to the cranial cavity than to the exterior, and that its extraction would have at least involved the destruction of the maxillary articulation, important nerves, vessels and muscles

would have been involved, and the dura mater of the brain laid bare and exposed to infection from a wound which could not be drained, even had it been possible to have avoided driving the fang into the base of the brain, causing sudden death during the operation, and from every standpoint apparently surgical interference was unwarranted.

A still more notable case in which the dental substance constituted a large part of the cranial wall is figured by Cadiot and Almy. Kitt quotes Magitot as giving three illustrations in which the teeth pressed inwards to the cranial cavity producing an intra-cranial protuberance, and mentions the existence of such a specimen in the museum at Munich. Dewar figures two cases also, in which the tumor projects into the cranial cavity. Cadiot cites a number of cases in which the tooth has pressed upon the brain.

While these reports suggest that this condition is not very common, they yet indicate clearly their existence and afford ground for the suspicion that they occur more frequently than is reported. When called upon, therefore, to examine an animal affected in this way, and the presence of a tooth in the cranial bones has been diagnosed, the question of our attitude toward the case becomes an interesting and practical problem, and the surgeon is asked to advise either for or against an operation. If the case proves to be like our No. 6, the surgeon has done well to operate, while if it be like our No. 7, it is evidently best to let it alone, as it was not causing the animal any great discomfort, nor in any way endangering his life. But unfortunately we have no means for differentiating between the two in advance.

In Case 6, it might be questioned what the result would have been had we simply removed the ectodermal canal between the two dotted lines F, Plate II, and had left the tooth and its bony covering entirely undisturbed. The specimen shows the pulp cavity of the tooth almost obliterated and hence the approximate completion of its growth, and we can see no reason why it should ever have caused any irritation or have led to a

fistula. It is true that it projected up for some distance above the neighboring parts and was therefore subject to violence or to undue pressure from the halter or bridle. Aside from this we see no reason to assume that it ever should have amounted to more than a harmless blemish. Yet it was readily and safely removed and the operation abundantly justified by the results.

Case 7, begins with the history of an open fistula which led directly upon the exposed tooth tissue and which was necessarily permanent so long as the tooth remained, and caused a disagreeable discharge consisting largely of pus with some odor and the part somewhat sensitive. It possessed a further danger that the diseased process might extend along the tooth and finally reach the meninges of the brain as in some of the cases related by Cadiot, or it might cause inflammation in the neighborhood of the maxillary articulation with difficult mastication, or it might press upon the facial nerve where its fang ends at D, in Fig. 3, of Plate IV. We have no means of learning how Case 7, came to end in a fistula nor do we find any definite case report in any of the records before us as to whether any such fistula has ever developed spontaneously or whether they were caused by accident or injudicious interference. If we open the cyst containing the tooth and lay it bare we know that we have irretrievably formed a fistula unless the tooth is successfully removed.

Another serious question in relation to prognosis is in reference to the duration of development of the tooth. In Case 6, the tooth as already stated, was apparently full grown at five months of age, while in Case 7, this could not have been so at a like age because the length of the tooth is so great that it could not have been accommodated in the cranium of the new born foal. It seems fair to assume that it might be safer to operate on the new born foal than upon the adult because of the hope that the tooth is not yet fully grown and hence can be more safely removed and in case of unfortunate results the value of the animal is less. In all cases the surgeon should acquaint the owner with the possibilities of the operation so that it may be undertaken with a full sense on his part of the dangers in-

volved. While we have no data upon which to base any figures we believe it is safe to say that a decided majority of cases are readily operable and warrant a favorable prognosis and that we should cautiously advise early operation.

Having decided to operate, the animal should be secured in lateral recumbency, preferably on the operating table, and if indications lead us to suspect a tedious operation, the patient should be anæsthetized, while in other cases local anæsthesia should be applied. Whether a fistula is present or not a free incision should be made down upon the tumor, the direction being controlled by the region in which the tooth is located. In the common location of the squamous bone the incision is best made longitudinally, parallel to the long axis of the head as shown in Plate II. The skin and subcutaneous tissues should be dissected back and retracted so as to freely expose the tooth. If the tooth is still covered by the bone it may be broken away by seizing it with the forceps, or cut away with chisel or gouge until its surface is freely exposed. If practicable it may then be seized with forceps and drawn out. But it may often happen that, as in Case 6, it is difficult to uncover the tooth to such a degree as to permit it to be withdrawn. In such case, Cadiot and others recommend that the bone should be chiselled away as far as practicable in the form of a groove around the border and the tooth then pried out with a gouge. This operation is to be cautiously done and the groove not extended into the ear bone. This mode we tried in Case 6 without avail, and then followed with several sharp blows with the punch and mallet without any apparent results, and eventually resorted to a longitudinal splitting of the tooth with the bone chisel. We have found the splitting of the tooth readily effective and far superior to our other efforts, as we have constantly observed also in repulsion of the teeth in the normal alveoli. The longitudinal splitting of a tooth is accompanied by far less violence to the parts and is highly effective in loosening it. We might, in fact, say that a tooth split longitudinally from crown to fang is a loose tooth. The direction of impact

with either the punch or chisel, in our efforts to detach one of these teeth, should always be from within outward, approximately in the direction indicated by the dotted line extending from T, in Plate II, as this avoids to the greatest degree any impact against the internal plate of the cranium. The case becomes especially delicate also, when the tooth is lodged in or against the petrous temporal bone. It is so hard, unyielding and fragile that any sudden impact upon it may cause a fracture, which will lead to infection, with serious or even fatal consequences, as has been recorded by Cadiot. We should, therefore, avoid any forcible impact upon this bone, especially in the vicinity of the auditory meatus.

In our Case 7, Plate IV, just below PB, Fig. 3, is seen a mass of new-formed bone emanating from the anterior lip of the auditory meatus, evidently due to our violent efforts to dislodge the tooth.

If we find that the tooth cannot be loosened by ordinary force, the surgeon should abandon the operation, except definite instructions have been given by the owner to the contrary, and yet we need not feel too fearful of untoward results from applying great force in a proper direction. In Case 7, probably nearly 100 heavy blows were struck with a mallet weighing two pounds and wielded by the writer with almost full force. The mechanical impact which the cranium withstood in this case gives one an exalted respect for its powers of resistance, and on the other hand, an examination of the specimen shows clearly how futile any amount of force would have been and how readily any blow might have caused the instantaneous death of the animal. Here, again, longitudinal splitting would have been more effective in loosening the tooth, but the consequences would still probably have been fatal. Evidently the injury to surrounding tissues is less from a sharp, quick blow on chisel or punch than from the steady leverage exerted by prying with forceps or elevator. But the unyielding petrous bone would have withstood no such violence.

When the tooth has been completely removed and the wound

is of such a character as to insure good drainage, an antiseptic pack may be placed in the alveolus, confined by sutures, and allowed to remain 24 to 48 hours, after which the wound may be left open and handled antiseptically. Cadiot, Möller and some others insist that the lining of the cyst should be completely destroyed with the curette, but we can see no more reason for curetting a tooth alveolus after removal of a tooth from the squamous temporal bone, than from a normal alveolus in the maxillary bone. We consider that the curetting is unnecessary and interferes with the healing of the wound.

Cadiot mentions that in some cases several teeth occur in one follicle and that in others successive dental cysts have developed in the same place, and that after one tooth has been surgically removed a second or even third one has formed in its place. We have tried to demonstrate that the tooth germ arises in a comparatively natural way from the invaginated epithelium, and we cannot conceive of how it would be possible for a second tooth to form when all the dental tissue had been removed from the part. It seems to us that the alleged successive formation of teeth was dependent upon one of two errors. In Case 7, the first operator believed that he had removed the entire tooth, but upon examination at the time of presentation, the tooth which we have figured had a crown which seemed to have been broken, which suggested that a portion had been broken off in the first operation leaving the main body behind, the piece of the crown which came away having been mistaken for the entire tooth. Another error which might occur and which was even probable with Case 7, along with the fracture of the crown of the tooth figured, is that another tooth existed at the time of operation, having the nature of a temporary or deciduous tooth while the larger and more important permanent member was overlooked. The operator should, therefore, be very careful in every case to make sure that he does not mistake a fragment or fragments of a tooth for the entire organ and leave a part, perhaps a very large part, still imbedded in the bone, and should be equally careful to see that a second or third tooth does not exist.

LITERATURE.

TYMPANY OF GUTTURAL POUCHES.

- Bassi*, Hering's Rep. B. 23, S. 347 (Möller).
 Il. Med. Veter., 1862, p. 233.
Cadiot et Almy, Traite de Therapeutique Chirurgicale des Animaux Domestiques, p. 139.
Degive, Annals de Med. Vet., 1883, p. 65 (Cadiot et Almy).
Falconio Baldassarre, Giorn. d'Anat. fisiol. Animali. 1870, p. 136 (Cadiot et Almy).
Friebel ü. Kühnert, Thier. Mitt., 1882, p. 52 (Cadiot et Almy).
Gohier et Vatel, Elements de Path. Vet. t. 2, p. 300.
Hoffman, Thierartzl. Chirurgie. B. 1 S 251.
McFadyean, Jour. Comp. Path. & Therap., 1895, p. 173. The Veterinarian, 1895, p. 710.
Möller by Dollar, Regional Veterinary Surgery, 1903, p. 121.
Niebuhr, Auftr. d. Luftsacke d. Luft. Bericht ü. Leist. i. Geb. d. Thr., 1859, p. 50 (Hoffman).
Niebuhr, Repertorium, 1860, p. 74 (Cadiot et Almy).
Penberthy, Jour. Comp. Path. & Therap., 1894, p. 174.
Sequens, Jahresbericht, 1894, p. 108 (Cadiot et Almy).
Stockfleth, Thierartzl. Chirurgie (Cadiot et Almy).
Thomassen, Annales d. Med. Vet., 1891, p. 121.
Vatel, Rec. d. Med. Vet., 1832, p. 102 (Cadiot et Almy).
Viborg, Tymp. d. Luftsäcke. Ber. über Leist. i. Geb., 1862, p. 29 (Hoffman).

DERMOID CYSTS, TOOTH CYSTS, ETC.

- Abadie*, Bul. d. l. Soc. Cen. d. Med. Vet., 1878, p. 1072.
Adam, Wochenschrift fur Thierheilkunde, 1862, p. 419 (Hoffman).
Bay, Annal. d. Med. Vet., 1871, p. 552 (Cadiot et Almy).
Bayer, Chirurgie, 1887, p. 277.
Barreau, Bul. d. l. Soc. Cen. d. Med. Vet., 1876, p. 223.
Berger-Perriere, Rec. d. Med. Vet., 1835, p. 586 (Cadiot et Almy).
Brückmüller, Wiener Bericht. B. IX, S. 28 (Hoffman).
Cadiot (Dollar), Clin. Vet. Med. and Surg., pp. 1 and 298.
Cadiot et Almy, Traite d. Therap. Chirurg. d. An. Dom., p. 18.
Degive, Annal. d. Med. Vet., 1873, p. 307 (Cadiot et Almy).
Degive, Annal. d. Med. Vet., 1880, p. 446 (Cadiot et Almy).
Deneubourg, Annal. d. Med. Vet., 1869, p. 226 (Cadiot et Almy).
Derache, Annal. d. Med. Vet., 1866, p. 262 (Cadiot et Almy).
Dewar, Jour. Comp. Path. and Ther., 1903, p. 127.
Franck, Tztl. Mitt., 1863, p. 199 (Hoffman).

- Gerard*, Annal. d. Med. Vet., 1871, p. 491 (Cadiot et Almy).
- Gerard*, Echo Vet., 1872, p. 273 (Cadiot et Almy).
- Godfrin*, Annal. d. Med. Vet., 1878, p. 259 (Cadiot et Almy).
- Goubaux*, Rec. de Med. Vet., 1854, p. 70 (Cadiot et Almy).
- Gurlt*, Gurlt ü. Hertwig, Mag., 1835, p. 20. Abnormal formation of a tooth in a tumor of the head of an ox (Hoffman).
- Gurlt*, Gurlt ü. Hertwig, Mag., 1851, p. 214 (Hoffman).
- Gurlt*, Gurlt ü. Hertwig, Mag., 1856, p. 356 (Hoffman).
- Gurlt*, Gurlt ü. Hertwig, Mag., 1857, p. 121 (Cadiot et Almy).
- Gurlt*, Gurlt ü. Hertwig, Mag., 1862, pp. 264-292 (Cadiot et Almy).
- Guerin*, Rec. d. Med. Vet., 1862, p. 78 (Cadiot et Almy).
- Guerrapain*, Rec. d. Med. Vet., 1866, p. 276 (Cadiot et Almy).
- Halot*, Annal. d. Med. Vet., 1888, p. 651 (Cadiot et Almy).
- Harpling*, Edinburg Vet. Rev., 1862, p. 728.
- Haubner*, Sachs. Jahresb., 1859-60, p. 50 (Hoffman).
- Hendrickx*, Annal. d. Med. Vet., 1885, p. 133.
- Hertwig*, Gurlt ü. Hertwig Mag., 1836, p. 356 (Hoffman).
- Hobday*, Jour. Comp. Path. and Ther. Vol. XIII., p. 174.
- Hobday*, (see Ridler and).
- Hoffman*, Chirurgie, 1892, p. 61.
- Huth*, Gurlt ü. Hertwig Mag., 1847, p. 318 (Hoffman).
- Karschäkel*, Mitt. a. d. tzt. Praxis. Hertwig., 1865, p. 172 (Hoffman).
- Lafosse*, Jour. des Vet. du Midi, 1855, p. 255 (Cadiot et Almy).
- Lanzilotti e Generali*, Gaz. Med. Vet., 1873, p. 274 (Cadiot et Almy).
- Lanzilotti e Generali*, Archiv. Med. Vet., 1876, p. 101 (Cadiot et Almy).
- Lanzilotti e Generali*, Rec. de Med. Vet., 1874, p. 69.
- Macorps*, Annal. d. Med. Vet., 1860, p. 11 (Hoffman).
- Veterinarian Vol. XXXIII., p. 358 (Ref. to preceding).
- Mage-Grouille*, Corresp. De Fromage de Feugre., 1811 Tome IV., p. 267 (Cadiot et Almy).
- Meer*, Gurlt ü. Hertwig, 1842, p. 471 (Cadiot et Almy).
- Meer*, Ber. ü. Leist. i. Geb. d. Thk., 1842-3, p. 22 (Hoffman).
- Mersiva*, Mitt. a. d. tzt. Praxis. Gerlach. ü. Schütz., 1857, p. 121 (Hoffman).
- Mettam*, Veterinarian Vol. LXXII., p. 309.
- Möller* (Dollar), Regional Veterinary Surgery, 1903, p. 113.
- Morot*, Rec. d. Med. Vet., 1882, p. 672, 1883, p. 85.
- Orest e Falconio*, Archiv. Med. Vet., 1868, p. 175 (Cadiot et Almy).
- Perosino*, Il. Med. Vet., 1868, p. 27 (Cadiot et Almy).
- Raiser*, Mitt. Comp. a. d. tzt. Prazis, 1862-64, p. 73 (Hoffman).
- Ridler and Hobday*, Jour. Comp. Path. and Ther., 1902, p. 267.
- Siegen*, Annal. de Med. Vet., 1885, p. 355.

- Tyvaert*, Annales de Med. Vet. Belg., 1860, p. 203, Ber. üb. Leist. i. Geb. d. Thk., 1860, p. 44 (Hoffman).
Verwey, Jahresbericht., 1886, p. 88 (Möller).
Vormeng, Gurlt ü. Hertwig, 1854 (Hoffman).

EPIZOÖTIC LYMPHANGITIS IN ENGLAND.—The following is a copy of the new order issued by the Board of Agriculture of England: (1) There has recently been introduced into Great Britain a contagious disease affecting horses, known as epizoötic lymphangitis. It has for many years existed in Italy, and in several other countries in Europe; it is also prevalent in India, and in some parts of South Africa. (2) The characteristic symptom of the disease consists of a swollen condition of the lymphatics of the skin on the inside of the hind legs, but the same condition may also be present on the side of the neck, or on the body. In most cases small nodules, varying in size from a pea to a hazel-nut, will be found, which eventually burst and discharge a small quantity of purulent material, containing an organism—the cryptococcus—which is the cause of the disease. (3) The cryptococcus, when microscopically examined, presents itself as an ovoid body, with a distinct double-contoured envelope and highly refractile contents. Owing to its considerable size, and its characteristic form, it is readily detected under a magnification of 400, and to this end it is not necessary to use any stain. The organism is easily transferred from the wound of a diseased horse to a wound on another horse not affected with this disease, and the most common means of such transfer is no doubt by the agency of sponges, rubbers, brushes, or other stable utensils which have been used about diseased horses, or possibly by the hands of the attendant. (4) From the clinical symptoms, epizoötic lymphangitis may easily be mistaken for the farcy form of glanders; it can, however, be differentiated from that disease by a microscopical examination of some of the discharge from one of the ulcers, when the cryptococcus which is the cause of the disease will be found; or by an application of the mallein test, to which epizoötic lymphangitis does not respond. (6) As the germs of the disease have been known to linger about a stable for a very considerable period, the owner should afford every facility for carrying out a rigid system of cleansing and disinfection in respect of the whole of the stable or other place in which an affected horse has been kept.

THE USE OF OXYGEN FOR MILK FEVER.

BY RICHARD P. LYMAN, HARTFORD, CONN.

So thoroughly satisfied have I been with the success obtained with oxygen as a treatment for milk fever that I have for some time intended to offer the results of my experience to the REVIEW for publication.

As so often is the case, when engaged in the routine of a general practice, I have allowed this to continue along unaccomplished, until a recent case so impressed me with both the therapeutic and intrinsic value of oxygen that I desire both to describe the latter and offer an expression of my idea of the value of this method of treatment.

Only a few days ago I received a call to visit, as soon as possible, a cow even then unconscious with what is universally described as milk fever. On arriving I found a well-bred Jersey cow lying flat upon her left side; head stretched out, entire loss of consciousness, temperature 102.4 and respiration already irregular and gasping, the mouth opening at each respiration. The history and general appearances soon satisfied me that I had to deal with a case of milk fever and one that to all appearances seemed hopeless; in fact, she was then breathing in such a way that I would not have been surprised to see respiration cease at any moment.

Concluding that energetic measures were imperative, I injected hypodermically, into the cellular tissue of the neck, $\frac{2}{3}$ gr. of strychnine after I had instructed an assistant to strip the udder. This done I hastily inflated each quarter (method to be described later) with oxygen, emptied the bladder and lower bowels, injecting into the latter a quantity of warm soapy water, and then waited for results. The effects of the oxygen began to be noticeable inside of ten minutes by profuse lachrymation and signs of returning consciousness; the latter was complete twenty minutes after the inflation had been started. The animal becoming now somewhat restless, finally swung her head

to the front, and in thirty-five minutes from the injection was reclining naturally, with head erect. Just one hour and fifty-five minutes from the injection the cow got up and appeared perfectly normal. I record this case in detail because it has been the general result with all the cases we (my partner and myself) have administered oxygen to, now numbering 24, but the results were much more prompt and the case was far and away more serious than any I have thus far seen saved by any treatment whatever. It may be well right here to remark that I have for some time been inclined to believe that the more advanced and severe the attack, the quicker has been the response both of the oxygen and strychnine that has been administered. Also, that a cow approaching death will not stand as stiff a dose of strychnine as one less seriously ill.

Although it may seem that I have reversed the usual procedure by telling my story first and then attempting to explain why I have the story to tell, I trust my peculiarities may be overlooked, and if I make statements which do not coincide with views held by others they may be excused on the ground that, as yet, no one has furnished us with definite knowledge of the disease.

Since the perfection of that wonderful machine styled the dairy cow, there undoubtedly has been no disease that has received a greater amount of attention, given rise to more widely divergent opinions, or been more dreaded by both the dairyman and the practitioner of veterinary medicine than that abnormal or pathological condition to which many names have been applied, viz.: Parturient apoplexy, parturient paresis, parturient fever and others too numerous to mention. It is however known and universally recognized by the name first applied to it by Skillet in 1807—viz.: "Milk fever," and although perhaps misleading and contrary to the symptoms exhibited, this term is accepted as expressing a peculiar condition of the new milch cow.

Without dwelling at length upon the causes of milk fever, the time is opportune to say that the exciting or direct cause

seems to me to be universally the same, and that any condition that tends toward plethora may be considered as primarily instrumental in bringing about this condition, such as: 1st. Proneness of heavy milkers (milkers that are gifted with excellent digestive abilities) to lay on flesh during the latter part of the time they are carrying their young; 2d. Poor ventilation, increasing the density of the blood, though an exciting cause does not mean that animals that are entirely out of doors will not develop milk fever; 3d. Habitual constipation; 4th. Lack of exercise; and a host of other conditions.

Wishing to fully impress upon you that my belief is that plethora is the primary cause, I will take the liberty to enlarge upon the term. Natural sluggishness and excellent digestive powers associated with high feeding furnish abundant material to repair the tissues of the body that are exhausted by the physiological metabolism, that is to say, by growth, normal retention of the body heat, energy, and, in the milch cow, production of large quantities of milk.

The gradual development of the foetus within the uterus assimilates a large part of the excess of nutritive material until a period when its enclosing membranes have separated from the mother. At this point nature intends that the excess of highly nutritive blood, so long held in equilibrium by aiding the growth of the calf, and forced away by the contractions of the muscular walls of the uterus, shall be accommodated by supplying the young with milk, so it happens that an organ more or less inactive is at once worked to its greatest capacity.

We may thus presume that excessive overactivity in the secretory parts is produced by an overabundance of nutritive material. This overactivity soon deranges the normal functions of the secretory cells of the udder, and there is produced in the latter a certain poisonous or irritating substance which interferes with its cellular function and becomes absorbed into the general circulation; likewise, if the udder is not working, the accommodation for the excess of blood thrown from the uterus must be found by flooding the general system, and from these

two conditions, viz., a general flooding and a general absorption of toxic material we have developed the symptoms of milk fever that are so well known to you all, that there is no necessity to dwell thereon. The treatment of this disease is what was more particularly the subject of this paper; the foregoing I have felt called upon to give in some detail that I may more clearly point out the indications for the special line of treatment that has been so successful as to warrant me in placing it before you.

All ages and many practitioners among dairy cattle have advanced remedies that have proved of little value, and the condition has continued with little or no improvement until a few years ago, when Dr. J. Schmidt, of Denmark, introduced his iodide of potassium cure, this, though decreasing the mortality, was still associated with a high percentage of loss, and oftentimes followed by injurious results to the udder. Early in March of last year, Dr. Kunsel, a French veterinary surgeon, of Lucerne, published a report on the value of oxygen as a cure of this disease, and though it has not yet been universally accepted, its value is such as to warrant it a permanent place in the annals of medical research of the present day.

Although the inspiration for this article lies in the results of oxygen which was introduced as a treatment for milk fever on the theory that the disease is due to an anærobic organism, the writer cannot persuade himself that the latter is the true cause, even though he acknowledges the treatment as a specific and gives credit to Dr. Kunsel for his discovery. The fact that almost universally, to all appearances, the most healthy cow succumbs, while a weak and sickly animal escapes; that many animals in the same herd calve and do not have the disease; that it appears at most irregular intervals; that it rarely occurs except after parturition, and this is seldom followed by disinfection; that certain strains or families are more subject to it than others, and other facts of similar nature tend to disprove his belief. Furthermore, thus far no inoculation experiments have been reported to substantiate the same.

Having been inconsiderate enough to doubt the germ theory

in connection with this disease and at the same time acknowledging Dr. Kunsel's treatment as practically a specific, it behooves me to advance some theory that may possibly explain just why oxygen is indicated.

Admitting it as possible that a cow suffering from this disease is flooded with large quantities of blood overcharged with nutrition and likewise that she is permeated with certain toxic substances, it at once appeals to the practitioner that something must be done to purify the blood as the latter is the direct agent that carries nutrition and impurities throughout the body, that something must be administered that will either deplete the blood or else increase its purifying powers. While depletion has long been employed and sometimes with success, the materials used for such purposes are too long delayed in their action to be universally successful; therefore, attention must be directed to the administration of something that will increase the purifying power of the blood.

Nature has provided red corpuscles in abundance that carry oxygen throughout the system to cleanse and repair tissue waste. Physiology teaches us that pregnancy is associated with a diminution of the red corpuscles and a microscopical examination of the blood of cows afflicted with milk fever shows the red corpuscles to be smaller than normal. It is evident from these two factors that the oxygen-carrying powers of the corpuscles is considerably diminished in those very animals that require a larger proportion of purifying material because of the conditions associated with plethora and with the toxic material thrown into the circulation.

It may at once be argued that if the corpuscles are diminished both in size and number, there is no opportunity for an excess of oxygen to be absorbed by them. This may be very true and possibly exhibit the weakness of this theory, but it is possible that in an atmosphere composed almost entirely of oxygen, absorption will be so much hastened as to relieve the abnormal condition of these contracted corpuscles and, furthermore, it is true that generally the amount of any gas a b

sorbed by a liquid such as plasma would depend upon the proportion of the gas in the atmosphere to which the liquid is exposed. Increase the proportion and absorption increases. The liquid part of the blood will not take up oxygen in large quantities, but will do so to some extent and even that may lend a purifying aid as well as increase the activities of the red blood corpuscles.

MODE OF ADMINISTRATION AND RESULTS.

Supplied with an assistant, a tank of oxygen which is under considerable pressure (I prefer the small tank containing 90 gallons compressed to about 5 or 6 gallons) and a piece of rubber tubing about six feet in length, one end of which is securely wired to a milking tube, while the other end is similarly attached to the detachable nozzle of the tank, likewise a hypodermic syringe and strychnine solution, a catheter, injection pump and a one-inch cotton bandage, the method of treatment is as follows:

As soon as convenient on reaching a case I inject hypodermically from $\frac{1}{3}$ to $\frac{1}{2}$ grain of strychnine in solution into the neck and instruct the helper to thoroughly strip out the udder. I then see that the latter is well washed off, that no dirt or infection will be allowed to enter with the syphon. With the rubber tubing screwed on to the tank and the adjusting wrench (that is supplied with the tank) attached, insert the milking tube into one of the upper teats and allow the gas to flow slowly until the quarter is quite hard and full. Instructing the assistant to hold the end of the teat firmly between the thumb and forefinger, the tube is withdrawn and a piece of the bandage is tied tightly around the teat as low down as possible, to prevent the escape of the gas. Following this procedure in all four quarters, the treatment is supplemented by light massage to the udder, catheterizing the cow, and, after emptying the lower bowels, injecting a large quantity of warm, soapy water; likewise build her up with bags filled with litter that she may rest comfortably upon the sternum.

Should it be necessary to repeat the treatment this may be done in six hours. The ligation should be removed from the

teat in about an hour and a half to prevent the circulation from being interfered with, but may, if necessary, be reapplied after the teat has been held a few moments between the fingers. A repetition is seldom necessary, the animal, if unconscious, soon becomes rational, acts improved, has profuse lachrymation and on an average regains her feet and normal functions inside of five hours. I have never seen a bad result to the udder and only once have I been forced to give a later tonic treatment for loss of appetite.

FIRST OMAHAN : "The doctor says my Jersey cow has the ague. Did you ever hear of such a thing?" Second Omahan : "No ; but the idea is a good one. You can have a milk-shake whenever you wish."

RABIES RAMPANT.—*Lisbon, May 30.*—The Portuguese town of Setubal, which has 30,000 inhabitants, is threatened with an epidemic of hydrophobia. Recently a mad dog bit thirteen other dogs, and these in turn went mad and bit two hundred goats and cows, which supply the town's milk. All the animals were killed and six hundred cheeses destroyed, but the precautions were not taken till two days after the accident.

AN EQUINE MONUMENT.—A monument has been erected in England to the memory of *four hundred thousand horses* which were killed, died or suffered in the South African war. The inscription on the monument reads : "In memory of the mute fidelity of the 400,000 horses killed and wounded at the call of their masters during the South African war, 1899-1902, in a cause of which they knew nothing, this monument is erected."

TETANUS.—Rogers (in the *Medical Record* of May 21) asserts that the toxine of tetanus travels from the periphery to the centre of the nervous system along the motor nerves only. He believes that for tetanus antitoxine to reach the central nervous system it must travel the same way. It is for this reason that antitoxine injections, as now given, produce such disappointing results. The author proposes that motor nerve trunks shall be exposed by incision as near the spinal cord as possible, and that the injections of antitoxine shall be given directly into such trunks. In addition to this, lumbar puncture should be resorted to, the nerve roots scratched if possible, and antitoxine injected in this locality also. One case treated by this method is reported. The patient recovered.

NAVICULAR DISEASE.

BY J. B. HOLLINGSWORTH, D. V. S., OTTAWA, CANADA.

Presented at the Second Annual Meeting of the Central Canada Veterinary Association, Ottawa, Canada, Jan. 27th and 28th, 1904.

In dealing with this subject I will refer to the general relation and anatomy of the parts.

The navicular bone is placed behind and beneath the lower pastern, and behind and above the heel of the coffin bone, so that it forms a joint with both and answers a very important office in strengthening the union between these parts, in receiving a portion of the weight which is thrown on the lower pastern, and in enabling the flexor tendon to act with advantage.

Supposing that this tendon were inserted into the coffin bone without the intervention of the navicular bone. It would act at great mechanical disadvantage in bending the pastern, for it is inserted near the end of the coffin bone, and the weight concentrated about the middle of the bone is far off, and requires a great power to raise it; but when the navicular bone is interposed, the centre of motion becomes the posterior edge of that bone where it is in contact with the tendon, and thus it will be seen that the distance of the power from the centre of motion is nearly or quite the same and a very great expenditure of muscular power will be saved. In the one case the power must be at least double the weight, in the other they will be nearly equal, and also the angle at which the tendon is inserted is considerably more advantageous.

Perhaps this is the principal use of the navicular bone, yet at the same time we are aware of the benefit which occurs from a portion of the weight being taken from the coffin bone and thrown on the navicular bone and from it on the tendon, with the tendon resting on the elastic frog underneath.

The navicular bone is sometimes said to descend with the motion of the foot. It cannot, for it is connected, both with the pastern and coffin bones by inelastic ligaments.

When, however, the horny bulb with its tuft of hair at the

back of an oblique fetlock descends in the rapid gallop and almost touches the ground, the navicular bone, being as it is part of the pastern joint, must descend with it. With this exception, both in the extending and bending of the pastern it turns or rolls upon the other bones rather than descends or ascends and with the remarkable advantage that when the pastern is extended the navicular bone is placed in that situation which enables the flexor tendon to act with greatest advantage in again bending the foot.

It must be remembered that the fore legs largely support the weight of the body when the animal is at rest, and that when he moves this breaks the shock which the fore feet must sustain as the body is thrown forward upon them by the propelling force of the hind legs.

This shock could not be withstood by the tissues of the fore feet and legs, were it not that it is largely dissipated by the elastic muscles which bind the shoulder to the body. The ease with which the arm closes on the shoulder blade and the spring of the fetlock joint are not sufficient within themselves to protect the foot from injury. Extraordinary as these means may appear for the destruction of the shock, and ample as they are when the horse is at slow pace or unweighted by rider or load, they fail to completely relieve the parts from concussion and excessive pressure whenever the opposite conditions are present.

It is self-evident then that the more rapid the pace and the greater the load, the greater must these contending forces be, and the greater the liability to injury.

For the same reason, horses with excessive knee action are more likely to suffer from this disease than others, concussion of the foot and intense pressure on the tendon being common attendants on their usage.

Besides these exciting causes must be considered those which predispose to the disease; most prominent among these is heredity.

It may be claimed, however, that an inherited predisposition to navicular disease consists not so much in a special suscepti-

bility of the tissues which are involved in the process, as in a vice of conformation, which, as is well known, is likely to be transmitted from parent to offspring.

The faults of conformation most likely to be followed by the development of navicular disease are an insufficient plantar cushion, a small frog, high contracted heels, and an excessive knee action.

The environment of domestication, the use of such dry stables, heavy pulling, bad shoeing, punctured wounds, etc., all have their influence in developing this disease.

The peculiar knuckling of the fetlock joint and the tottering of the whole of the fore leg known by the name of "grogginess," and which is so often seen in old and overworked horses, is seldom an affection of either the fetlock or pastern joints; indeed, it is not hard to fix on the particular joint. It is that which is deep-seated in the foot and where the flexor tendon runs over the navicular bone, when disease attacks these tissues, as the large number of cases of navicular disease proves. The horse, to avoid throwing a portion of his weight on the flexor tendon, which in a healthy state is so well able to receive it, goes as much as possible on his toes, steps short and lightly, producing that appearance of unsteadiness to which the term is applied.

It may be combined with a want of power in the ligaments of the joint, generally produced by frequent and repeated sprains, or by ill-judged and cruel exertion. Bad shoeing and want of stable care may help to increase, but it will never alone produce "grogginess." It is one of the evils of excessive work. In many cases it is rheumatic in character, and may be from want of exercise or from standing on an uneven floor.

Symptoms.—In the early stages of navicular disease they are generally very obscure.

When the disease begins in inflammation of the navicular bone, the animal points the affected foot while at rest, before any lameness is seen. While at work he apparently is as well as ever, but when placed in the stable one foot will be noticed

to point out in advance of the other. After a time, if the case is closely watched, the horse takes a few lame steps while at work; but the lameness disappears as suddenly as it came on and the driver doubts that the horse was really lame, thinking perhaps from only bad placing of foot on uneven ground. Later on the horse has a lame spell, which may last the greater part of the day, but the next morning he is all right. He leaves the stable sound, but goes lame again during the day. In course of a short time the horse is laid up with a severe attack of lameness, which may last a couple of weeks, and when treated in the usual way (poultices, blisters, etc.), he goes sound again. Perhaps it will be weeks or months before another attack supervenes. Finally, if feet are somewhat neglected and the horse is worked or driven hard, he becomes constantly lame and the more he is used the greater the lameness.

Many horses with well-formed and open feet become permanently lame, and it is very puzzling to locate the seat of lameness or discover the cause. The horseshoer has had his explanation, "the shoulder," but the practitioner may not have been able to discover any cause of lameness in the whole limb. There are few accustomed to horses who do not recollect an instance of this kind.

In the lameness of navicular disease the affected leg always takes a short step and the toe of the foot first strikes the ground so that the shoe is most worn at that point. If the horse is made to move backwards, the foot is set down with exceedingly great care and the weight rests upon the affected leg but a moment.

If he is lame in both legs the gait is stilty. The frog is generally shrunken, often of a pale reddish color, and when sole is pared out there will often appear reddish spots. If the heels are pared away so that all the weight comes on the frog, or, if the same result is obtained from a bar shoe, the horse is exceedingly lame.

The muscles of shoulder and leg shrink away and he often trembles as the horse stands at rest. After a month of lameness,

the foot is found to be narrowed and apparently lengthened ; the horn is dry and brittle and has lost its natural gloss.

A horse suffering from this form of lameness comes out of the stable stiff and lame. He may be scarcely able to put his lame foot to the ground but after he has been exercised for a short time, particularly if the ground be soft, the great lameness disappears, but he seems rigid and bound from some stiffness of the muscles of the chest and shoulders.

On this account our forefathers called this disease " chest founder."

The muscles of shoulder and chest waste, but this has no connection with disease other than that it results from diminished function, due to the limited action of the limb.

Treatment.—Recollecting that the first stage is that of inflammation, all means should be used to arrest this process before any alteration of structure has taken place.

Shoes are to be removed, the frog allowed to touch the ground, the feet placed in a cold water bath for several hours during the day and in a poultice of bran and linseed at night. He should be encouraged to lie down as much as possible. He should be given an occasional purgative and kept on cooling diet. At the end of a fortnight whether the lameness be removed or not a blister should be applied around the coronet. Cases that resist this treatment will frequently recover under the action of a seton passed through the frog and a run for a month or so at grass in a damp pasture free from stones. The recovery may be a restoration to perfect soundness when the surface of the bone has not been diseased. However, if cartilage be diseased and horse still goes lame great care must be taken of the feet, and preparing them for the shoe.

The heels should be encouraged to grow, the toe kept short and sole thin, so that when the horse puts down his foot there will be a certain amount of spring. The shoe should be slightly bevelled out at heels. Slight heel caulks with no toe caulks, packed with tow and tar and a leather sole. In shoeing this way in spring, summer and fall the horse will do his work

almost sound. In winter time remove the shoes and allow horse to travel barefooted on snow. This will allow and assist the foot to spread and grow into proper shape.

In very painful cases an operation may be necessary in which the sense of feeling is destroyed in the foot, by cutting out portions of the nerve at the fetlock "neurotomy."

This operation, however, can only be advised in certain favorable cases, and it is sometimes hard to determine whether or not the operation should be performed. I would say, never operate on a very heavy, thick legged horse; never operate where the feet are thin, weak in the heels, full in the sole or showing any predisposition to laminitis. Operate only where the foot is good and strong; the horse's action not too high and the lameness otherwise incurable.

RADIUM would cost \$8,000,000 per pound, if that quantity were in the world.

THERE are 19,373 trotters with standard records and 10,657 pacers with standard records. This is up to the close of 1903. It shows that the trotter has the preference.

DR. GEORGE HILTON, Portage la Prairie, Manitoba, reports twenty recoveries out of twenty-five cases of milk fever treated with oxygen.

AFTER an interval of a decade, there promises to be a revival this season in trotting under saddle. C. K. G. Billings' black trotting gelding Charlie Mac, 2:07 $\frac{3}{4}$, by McKinney, 2:11 $\frac{1}{4}$, is being trained to saddle by H. K. Devereux, the Cleveland amateur, and seems to take readily to that way of going.

THE Italian government encourages horse breeding by exhibitions, prizes and purses for racing, giving annually from 50,000 to 60,000 francs for these purposes. These sums were increased a year or two ago to 100,000 francs, and the number of stallions in the government breeding stations was increased from 300 to 500.

THE life of a nine-day-old trotting-bred filly by Jay McGregor, dam Olga, by Lumps, was saved at a veterinary hospital at Lexington, Ky., recently, the second case on record. The filly having locked bowels, veterinary surgeons opened the body and set the entrails right. The filly has recovered. She is engaged in all the big futurities.—(*Horse-shoers' Journal*.)

REPORTS OF CASES.

"Careful observation makes a skillful practitioner, but his skill dies with him. By recording his observations, he adds to the knowledge of his profession, and assists by his facts in building up the solid edifice of pathological science."

PARTURIENT APOPLEXY—MORE RESULTS FROM OXYGEN.*

By DR. S. S. SNYDER, Cedarburg, Wis.

Having had considerable bad luck with the iodide of potassium treatment in parturient apoplexy, and after reading the success Drs. Tennant and Barnes, of London, Ontario, had with the oxygen treatment, I thought I would try it. On September 17 last, I went to Milwaukee to the different dental depots. At Patterson's I found a cylinder containing forty gallons of pure oxygen. I attached my hose and tube, which I used to use in giving iodide of potassium. It worked fine, but I had nothing with which to measure the oxygen. They had no sack less than four gallons, so I had to guess at it.

No. 1.—On October 7, I was called to see a grade Holstein cow having calved about twenty-four hours; down and unable to get up. Semi-comatose. Saw her about 6.30 P. M. Injected oxygen; in three and one-half hours she was on her feet. Saw her next morning. She was eating as if there had been nothing wrong with her. Same cow had milk fever one year before, when it took her about fourteen hours to get on her feet with the iodide of potassium treatment.

No. 2.—October 10. Full-blood Guernsey cow, calved about thirty hours; down and unable to get up. Saw her about 5 P. M. Injected oxygen; in four hours she was on her feet. In this case I had some trouble to get her bowels to move.

No. 3.—October 14. Grade Guernsey cow, calved about twenty-four hours; down and unable to rise. Semi-comatose. Saw her about 1.30 P. M.; injected oxygen; in one hour after she was on her feet, and made good recovery.

No. 4.—October 19. Grade Durham, ten years old, calved about twenty-four hours before she went down. Was called about six hours after she went down. At 12.30 P. M. injected oxygen, filled the udder quite full, closed up the teats so that the gas could not escape. Gave another injection next morning as she was still in the same condition. She died about 12 M. same day. The oxygen seemed to have no effect on her.

* Read at the meeting of the Society of Veterinary Graduates of Wisconsin, February 4, 1904.

No. 5.—October 21. Grade Durham cow, had calved about twenty-four hours before noticing her sick, which was some time in the forenoon. She went down at noon, unable to rise. I was called about 8 P. M., filled her udder well with oxygen. Called to see her next morning; found her up and looking for something to eat. She had gotten up during the night. The owner did not know at what time as he did not stay with her.

No. 6.—November 2. Grade Durham cow, calved about twenty hours before she went down, unable to rise. Had been down since noon. Saw her in the evening. Injected oxygen about 8 P. M. Saw her next morning; found her up and doing well.

No. 7.—November 3. Grade Guernsey, had calved about eighteen hours when owner noticed she was not well. This was the evening of the 2d. I was called next day; got there about noon, gave her an injection. She got up same afternoon and made a good recovery.

No. 8.—November 17. Grade Durham, had calved about twenty-four hours when she went down, unable to rise. This was in the morning. Saw her in the afternoon about 4 P. M.; injected oxygen. At 8 P. M. she was on her feet; made good recovery.

No. 9.—November 17. Grade Durham cow, had calved about twelve hours before she went down, unable to get up. Comatose. At 10 P. M. gave injection of oxygen. She got onto her feet next morning at 5 A. M.

At the time I had the two last the weather was very cold. The last one was in a very cold stable.

CALCIUM SULPHIDE IN THE TREATMENT OF SEPTICÆMIA.*

By G. R. YOUNG, D. V. S., Omaha, Neb.

The patient, a brown gelding about eleven years old and weighing when well twelve hundred and fifty pounds, had its right hind foot punctured by a screw bolt that made a rather large opening near the centre of the bottom of foot and caused great lameness. The owner took it upon himself to dress the wound and applied a hot flaxseed meal poultice and apparently felt content with the progress that was being made for twenty-four hours. After that time had expired and on going to the stable in the morning he found to his surprise the animal standing on the punctured foot and extremely lame on the

* Read before the Nebraska Veterinary Medical Association.

other. He looked the horse over carefully and found extensive swellings of the lymphatics and the scrotum swollen out of all proportions and came to the conclusion that this was evidently beyond his skill and I was called to prescribe. On arrival I found the conditions as already described existing and on a close examination discovered that the left hind foot on the fatty cushion of the heel had been to all appearances punctured by a stable fork, which to me accounted for the temporary resting of the foot. I saw that I had a very critical case with which to deal and concluded that the first thing to do was to endeavor to arrest the progress of septicæmia, at the same time holding out very little encouragement to the owner for the horse's recovery. As he was attached to the animal and counted him to be the best one of eight that he owned, he was very anxious to do all that was possible to save his life.

The terribly swollen condition of the scrotum was a great source of alarm to the owner, so I, with some difficulty, passed the catheter; this, however, without getting any material result or benefit.

The medicinal treatment was as follows :

R Calcium sulphide, ʒ iss
Pulvis hydrastis, ʒ iii

M. et. fiat Chart. No. xii.

Sig. One powder every three hours.

On account of the severity of the case, I ordered the first three powders to be given at intervals of an hour and a half.

In addition to this I prescribed :

R Fl. ext. nucis vomicæ, ʒ vi
Spts. vini rect., q.s., ʒ xii

Mix, and give one ounce in four ounces of water every three hours.

I ordered this pushed the same as the powders.

My next visit found the animal exhausted, and had lain or fallen down during the night, efforts to raise him proving futile. I decided to use the slings. The horse was raised easily and comfortably and commenced to eat and drink well. I left him resting better and gave instructions for manipulating the slings. He (the owner) promised to telephone me the next morning to report progress, and, to tell the truth, I was prepared to hear news of any sort.

This is, however, what he said : " Well, the old horse is on his feet ; drank a pail and a half of water and ate nearly all of a bran mash prepared for him." My reply was that I would call later and see him, which I did, and found conditions im-

proved fifty per cent. The horse was still in the slings, but able to step from one side to the other—the first time in four days.

I omitted to state that I applied freely to the scrotum oxychlorine plastic dressing to relieve the local swellings. This, I feel sure, proved a valuable adjunct to the internal treatment. At my next visit, two days later, I found the swelling much reduced, general appearance improved, able to move around in the stall freely, appetite better, with prospects of recovery good.

My main object in presenting the report of this case is to show and extol the virtues of calcium sulphide in such a way as to induce every veterinarian to give it a trial if they have not already done so. The rapid change that it seemingly makes on the animal economy is such that to me is bound to commend its use in all cases of existing or anticipated blood poisoning. Alcohol in the early stages, followed later by beer, aids materially in adding support and stimulus to the general condition.

The wounds were treated by cleansing thoroughly with creolin solution, but up to this time the wounds have not received as much attention as the internal treatment, on account of the utter impracticability of dressing them.

SALIVARY CALCULI.

By NEWTON G. LEGEAR, V. S., Waco, Texas.

Subject, a sorrel driving mare, six years old, 14½ hands high. Was brought to my office Oct. 29, 1903, by Mr. ———, who requested me to cut into her cheek and remove some stones which could be distinctly made out by digital examination. He said that she had been operated on three years previously, and several stones removed, but as he could feel some more in there yet, concluded that they had not all been taken out.

Upon examination I found the whole left side of her head and cheek very much swollen, the tumefaction extending from the base of the ear to the angle of the mouth, especially along the course of the salivary duct. The parotid gland, the masseter and buccinator muscles, as well as those of the lips, were particularly implicated. The affected side was not unlike that of a case of purpura, and on account of the extensive œdema the animal was unable to eat. An examination per orem revealed the fact that pus and saliva were discharging into the mouth through the opening of Steno's duct.

By applying a twitch to the nose, and making a free incision into the cheek opposite the third upper molar tooth, I easily extracted eight or nine white smooth calculi, varying in size from a pea to that of a walnut, the largest one weighing one ounce. Great quantities of saliva and inspissated pus were evacuated during the operation. By syringing and washing out the cavity with an antiseptic solution and packing it with oakum, the operation was completed.

Next day I removed the oakum, syringed out the cavity, and packed it again with oakum; after which the owner treated and took care of her himself. On the fourth day she was again returned; the swelling had nearly all subsided, and she was eating well, but there were two fistulous openings into the parotid gland, which were discharging saliva and pus freely. I gave instructions to keep the parts as clean as possible by washing and syringing with the same solution, and, to my surprise, in three weeks time the openings had all healed up nicely, and the animal has remained sound and well ever since.

According to the history of this case it would be very interesting to know whether another crop of stones will develop during the course of another three years and necessitate another operation.

I would like to ask the editors of the REVIEW if such cases are at all common; also, how many cases, all told, have been reported in the AMERICAN VETERINARY REVIEW since its first publication?

[NOTE.—Salivary calculi have been reported from time to time in these pages, but they have not been very numerous. We have not the time to look up the records in order to answer our correspondent's last query.—EDITORS.]

TETANUS IN A DOG.

By LYNFORD E. TUTTLE, M. D. V., Bernardsville, N. J.

Having seen in the REVIEW for February, and also for March, reports of cases of tetanus in the dog, I am led to report a case that occurred in my practice.

On Jan. 1st, 1903, I was called to see a white English terrier bitch. On Dec. 1st she had been brought from a locality where there had been a few cases of rabies. Dec. 28 was the first the attendant noticed anything wrong. Jan. 1st, temperature was 101.2° F., ears erect and drawn together, forehead wrinkled, legs and back stiff, neck stiff (stag-neck), very excitable;

would tremble violently when handled. Masseter muscles puffed out, but could open jaws; constant attempt to drink, but could swallow very little, if any; would void urine and fæces if carried outdoors. Gave chloral in water, which caused spasm of the larynx and great distress; could get no history of any injury. Then gave cannabis indica, potassium bromide and chloral in syrup. Her condition remained about the same until the night of Jan. 3d, when the attendant thought her dying. On Jan. 4, could swallow a little and did not appear quite so thirsty. Jan. 5, temperature was 102° F., the highest at any time. On Jan. 7, muscles were a little less rigid and she would send her body sidewise a little; could swallow better, and would eat some. Jan. 9, muscular rigidity nearly gone; would lie with head around to side. Made good recovery.

I later learned that about Dec. 6-8 she broke a toe nail, causing her to go lame for a few days, but as it healed so readily attendant had forgotten about it.

AMPUTATION OF UTERUS OF A DOG.*

By G. A. MCKAY, M. D. C., Avoca, Iowa.

On November 10th, 1902, a man brought a female dog to my office for treatment.

History.—Owner said she was spayed about two years previous by an empiric of this town. The wound healed but she never did well; she lost in flesh, poor appetite at times, a discharge with a bad odor from her vulva more or less all the time but worse in the summer and fall. She laid around more or less all the time.

Etiology.—I am at a loss what would cause this condition unless it was either from septic infection from the operator's hands and instruments or animal being pregnant at time of spaying and the placental membrane being retained setting up a chronic metritis.

Symptoms.—On examining found the dog's temperature 104, pulse 95, hair dry and scurvy. A thick dark reddish discharge from vulva, mucous membrane slightly swollen. On closer examination found discharge coming from vagina and uterus; discharge had a very annoying and offensive odor; little or no appetite, slightly constipated, eyes slightly swollen with slight discharge from them.

* Presented to Meeting of Iowa State Veterinary Medical Association, 1904.

Prognosis.—Advised owner that the only treatment was to operate on the dog, to save her life, but the owner refused to have an operation performed.

Treatment.—Local treatment was applied by injections of carbolic acid, tannic acid, $\bar{a}\bar{a}$ grs. xx, glycerine $\bar{\zeta}$ i, aqua $\bar{\zeta}$ iii, three times a day; internally beef tea, raw eggs, etc., were given, but no results. The dog kept on getting worse from day to day, temperature ran up to 107, pulse 150, no appetite, discharge getting worse. On Nov. 27th owner decided to have an operation performed on the dog. The dog was put on a table and the seat of the operation was cleaned and antiseptically washed with a "1 to 1000" of bichloride of mercury. The dog was put under perfect influence of anæsthesia of chloroform and ether. An incision was made through the median line just posterior to the umbilical cord, one and a half inches in length; found a great deal of difficulty in bringing the uterus and the two horns out through the incision as uterus and both horns were filled with matter. After being brought out the uterus was amputated with ecraseur just posterior to the os; then wound was washed antiseptically with a "1 to 1000" solution of bichloride of mercury, wound closed with four stitches and a dry dressing applied of 1 to 8 of iodoform and boracic acid and some absorbent cotton and bandage applied. This treatment was repeated twice a day and stitches removed on the tenth day. The wound healed completely in five weeks and the dog fully recovered and has been well ever since.

Discussion.—A. S. Brodie advised that the clitoris be removed in bitches that came in heat or flowed after spaying.

EXPERIENCE WITH TALLIANINE.

By Z. W. SEIBERT, V. S., Crestline, Ohio.

On April 4, 1904, I was called by telephone at midnight to come over near Tiro, O., to see a sick horse. On my arrival I found a western horse that was developing a very bad case of catarrhal pneumonia. Found him with a temperature of 104°, circulation 65, respiration 45; ears lopped; extremities cold; nostrils dilated, and visible mucous membranes congested. Sore, hacking cough. I gave my ordinary treatment for pneumonia and went home, to return next day. On my return found my patient not at all improved. Next day no improvement, and, if anything, worse. On April 6, I telegraphed to Chicago for six tubes of tallianine and received same April 7. I gave 10 c.c. and dispensed with all other treatment. On April 8, gave 10 c.c.

more. On April 9, gave 10 cc. After giving the first dose the temperature had come down to 103°. After the second dose it came to 102°. In twelve hours after the third dose the temperature was normal, circulation 48, extremities warm, respirations 15, and horse began to eat; mucous membranes healthy. Put horse on tonics and dismissed him well. April 11, seemingly as well as ever.

This being my first experience with tallianine, it surely gave me great satisfaction, and I will give it further trial.

"THE REVIEW has been better than ever for the past year, and I wish to congratulate you on your success in furnishing the veterinarians of the United States a journal that compares favorably with anything in that line published in the English language. Have been a constant reader for the past thirteen years and cannot afford to miss a number now."—(W. G. Clark, M. D. C., Marinette, Wis.)

ANSWERS TO CORRESPONDENTS.—C. S. B., Circleville, Kansas.—We think you have the mortality of pneumonia in the jack exaggerated. If simple lobar pneumonia, recovery is quite probable under proper scientific treatment. The statement of the editor of your local paper that the disease is "always fatal" is altogether unauthoritative. Probably some REVIEW reader who has had large experience with these animals will give his results in treating pneumonia as affecting them. . . . P. H. B., New York.—The anti-docking bill failed to pass the recent legislature. The only law against the operation is that of cruelty to animals. . . . H. H. J., Illinois.—There can be no harm in blistering the hock or pastern with biniodide of mercury ointment (1:8), and applying officinal cantharides ointment on top of it, rubbing them both well in together. The combination will prolong the counter-irritant effects of each and make the blister more profound, without endangering the integrity of the hair follicles. It will also confer decided absorbent properties to the blister. Such a combination, unless greatly diluted, should not be applied to regions where there is much muscular tissue, as the shoulder or hip. . . . P. V., North Dakota.—Your inquiry regarding the *modus operandi* of the oxygen treatment for milk fever is well answered in the present number of the REVIEW in the paper by Dr. R. P. Lyman on that subject. If you had read well the May number you would also have been supplied with the details of the treatment in the paper by Dr. W. H. Ridge, of Trevese, Pa.

EXTRACTS FROM EXCHANGES.

GERMAN REVIEW.

By ADOLPH EICHHORN, D. V. S., Bureau of Animal Industry, Ellis, Kansas.

INTERMITTENT LAMENESS IN A HORSE DUE TO A COMPRESSION OF THE PELVIC AND FEMORAL ARTERIES [*Prof. Dr. Fröhner*].—An eight-year-old gelding while at work suddenly collapsed, but soon was able to rise. A rectal exploration revealed slightly to the left of the bifurcation of the aorta, a firm, pulsating, painless tumor, of the size of a double fist, and which appeared grown together with the aorta. The animal was destroyed. The tumor, a lymphsarcoma, compressed the arteries and corresponding veins.—(*Berl. Thierarzt. Wochenschr.*)

A CASE OF MALIGNANT ŒDEMA IN A HORSE [*Prof. Dr. Fröhner*].—A twelve-year-old mare received an injury on the left hip by a hay fork. After three days the neighboring parts of the wounds were considerably swollen. The animal showed impairment in general health. Condition when received for treatment: Extensive crepitating swelling, which reached to the knee; wound secretion frothy, foetid, of a light brownish color. General condition considerably impaired. Temperature 39.5° C., pulse 68 and very weak. The visible mucous membranes highly reddened, appetite depraved. Clinical diagnosis: Malignant œdema. Treatment: Large deep incisions, antiseptic irrigations, painting with tincture of iodine, subcutaneous camphor injections. After 10 hours' stay at the hospital and 24 hours' sickness, the animal died. Pathological diagnosis: Malignant œdema.—(*Berl. Thierarzt. Wochenschr.*)

CONTRIBUTION TO THE DIAGNOSIS OF CHRONIC GONITIS IN THE HORSE [*Prof. Dr. Fröhner*].—Gonitis appears as an apparently spontaneous lameness, the animal improving after rest. In both sides gonitis lameness manifests itself in a peculiar tripping gait, also in an alternative lifting of the hind extremities. The affected leg is frequently flexed. The animal avoids laying down and rising. In pronounced cases, a visible hard, painless, diffused thickening of the whole joint is a pathognostic symptom, while in milder cases an exostosis of the superior extremity of the tibia, of the size of a pigeon's egg to that of a hen's egg, is noticeable. The examining place is not the anterior surface, but about at a hand's length from the an-

terior border of the patella, inwardly, and at the width of a hand under the same. Passive movements of the joints, flexion and abduction, cause pain. The differential diagnosis from a spavin is often difficult. Pain on moving the joint, localized muscular atrophy of the quadriceps, continual elevating of the affected extremity in a flexed position, are symptoms indicating gonitis. When both conditions are present, a cocaine injection will decide the seat of the lameness, as it only relieves the spavin lameness.—(*Berl. Thierarzt Wochenschr.*)

AN EXPERIMENTAL STUDY OF THE ACTION OF SUPRARENIN ON THE ORGANIC TISSUES, AND THEIR ACTION IN SURGICAL OPERATIONS [*Dr. B. Mueller*].—The extract of the suprarenal capsule, appears on the market in the following preparations: 1, suprarenin; 2, adrenalin; 3, epinephrin. The action of the suprarenal extracts consists in contracting the muscular fibres of the small vessels in a way that the bleeding from them ceases immediately. When larger vessels are concerned, a complete contraction cannot take place; however, their lumen is considerably diminished. After this action of the suprarenal extract was ascertained, experiments were made as to its hæmostatic value in surgery. The author injected in the back of a dog, a solution, consisting of eucaïn B. 0.5:1000.0 c.cm. solution. To 10 c.cm. of this solution 5 drops of a 1 per cent. suprarenin solution was added. The injection was performed in a manner that an area of 2 by 3 cm. was infiltrated. The author then made an incision through the skin, beginning at the border of the infiltrated part, extending through the entire length of the same, and terminating it slightly outside the infiltrated part. The author observed that from the parts not infiltrated the bleeding was profuse, while he succeeded in extirpating a piece of the skin, without any bleeding, from the infiltrated portion. In the infiltrated part, the bloodvessels showed on microscopical examination to be considerably contracted, so that they only contained a few small blood corpuscles. In this way, the extirpation of the tongue in a dog was successfully accomplished without the flow of a *drop of blood*. Extirpations of lobes of the liver were also successfully carried out without bleeding. Dr. Hecht recommends the suprarenin in epistaxis as snuff powder in the following formula: R Zinc sozoiodol, 0.3 (—0.5—0.1); menthol, 0.2 (—0.3—0.5); suprarenin cryst., 0.001 (—0.002); sacch. lact., 10.0.—(*Muench. Med. Wochenschr.*)

THE STAINING OF SOME BACTERIA IN TISSUES WHICH

ARE DIFFICULT TO STAIN [*De K. Zieler*].—We have good staining methods for bacteria which are difficult to stain (Kuhne, Loeffler, Unna, etc.). Such are the bacilli of glanders, of typhus, the gonococci, etc.; however, these methods have the disadvantages of staining the base in the same color as the bacteria, which causes considerable difficulty in their detection. The author applied a different method, which has the advantage that with a remarkably nice differentiation of the bacteria the cell nuclei and the construction of the protoplasma appear sharply defined. The procedure is the following: 1. Hardening according to desire—the best success was obtained with formalin—Mueller's formalin solution (1:9), paraffin imbedding; or celloidin imbedding, with the extraction of the celloidin before staining. 2. Staining over night (8-24 hours) in Prauter's mild orcein solution: Orcein D., 0.1; pure nitric acid. 2.0; 70% alcohol, 100.0. 3. Washing in 70% alcohol. Then 4. In water. 5. Staining for 10 minutes to 2 hours in polychrom. methylenblue. 6. Washing in water. 7. Thorough differentiation in a glycerin æther solution (Gruebler's). 8. Washing in water. 9. Washing in 70% alcohol, absol. alcohol, xylol balsam. After this staining the construction of the nuclei appear sharply defined. The protoplasma is pale, sometimes of a grayish blue color, while the base is perfectly colorless, or of a light brownish hue. The bacteria appear dark blue, sometimes black-blue, and are sharply defined in the tissue. The author concludes the advantages of this staining in the following: (1) The stain can only be extracted with difficulty with alcohol. (2) The base is colorless or of a light brownish hue. (3) Besides the appearance of the elastic fibres, the construction of the cell nuclei and the protoplasma can be plainly seen. (4) It can be easily executed and the beginner can obtain good results.—(*Centr. bl. f. Alg. Path.*)

FRENCH REVIEW.

By Prof. A. LIAUTARD, M. D., V. M.

SECONDARY SUPPURATIVE MYOSITIS IN A HORSE—GENERALIZED PYÆMIC INFECTION—DEATH [*Mr. Bergeon*].—Aged six years, this horse is taken with paroxysmic hæmoglobinæmia (azoturia). He is bled, receives an injection of pilocarpine and is wrapped in moist blankets. He also receives

digitaline and caffeine in granules, one of each every hour. Six litres of artificial serum are injected the same day. Under this treatment the horse soon improves, when after about eight days the temperature goes up to 41°C ., the hind quarters become again weak, the legs are swollen, the croup is full, there are colics, the urine is dark again and albuminous, there are marked evidences of great trouble brewing. But what? Severe treatment is prescribed. Mustard poultice on the chest, acetanilid, phenacetine and antipyrine are given internally, with digitaline and caffeine. The result is negative. A consultation confirms the critical condition of the patient, viz., suspicion of purulent infection, with formation of abscesses in the gluteal region. But the animal is of great value, and all efforts to save him are demanded by the owner. Hundreds of penetrating points of cauterization are applied on the gluteal region. Phenicated ointment is used to dress them. Digitaline, caffeine, and quinine are prescribed; 40 centilitres of Marmoreck's serum are injected, etc. No result; the animal finally succumbs. At the post-mortem the muscles appear with a marked salmon coloration; they have a repulsive odor. The gluteal muscles and those of the flat of the thigh contain purulent collections of various sizes, from that of a nut to that of the fist. The muscular tissue is soft, washy in color. A thick lymphatic cord runs on their surface upwards to an hypertrophied inguinal lymphatic gland, which is transformed into a large abscess. There are suppurative gatherings on the mesentery; the liver contains them also. The bladder contains urine, dark in color and rich in albumin. Pulmonary abscesses are found, principally in the left lung, where one has opened into the bronchii and poured its contents into the trachea. The myocardium is soft and discolored, the endocardium is dark and its surface is thick and rough.—(*Journ. de Zootechnie, Dec., 1903.*)

RUPTURE OF THE BLADDER IN A SLUT [*M. P. Leblanc*].—This animal suffered much with constipation and loss of appetite. She also tried frequently to urinate, but without result. Her abdomen was large, the animal moved with difficulty, keeping her hind legs apart. On palpation of the abdomen, the intestinal mass was felt with difficulty, displaced as it seemed to be by a hard, tense and elastic tumor. The abdominal cavity seemed to be a large pouch full of fluid, and yet it was not a case of ascites. Vaginal exploration gave no indication. Rectal examination revealed an empty rectum, but far forward the finger felt a hard solid mass. Catheterism of the urethra failed.

A soft and solid catheter could not enter the bladder—arrested, it was supposed by a foreign body back of the meatus, in the urethra, or at the vesical neck. The cystic tumor was explored with a trocar; only a few drops of fluid, red in color and smelling like urine, were extracted. Further examination was postponed to the next day, when the dog was found dead. Post-mortem: About one litre of bloody urine was found in the abdominal cavity. The digestive organs offered nothing peculiar, except in the last portions of the colon and in the rectum a large mass of fæces was found, hard and packed. The bladder was retracted upon itself, had a purplish color, and on its inferior face presented a tear, from one to two centimetres long. The internal face was highly inflamed; ureters were enlarged; kidneys had hæmorrhagic centres. No foreign body was found. It is probable that the cystic tumor felt in the abdomen was nothing else than the bladder, and that the difficulty in introducing the catheter was due to the presence of the fæcal mass pressing upon the urethra. This is the second case of this kind, fullness of the bladder due to coprostasis, that the author has observed.—(*Journ. de Zoötechnie, Dec., 1903.*)

CEREBRAL TUMOR IN A HORSE [*R. Bissauge and Naudin*]. —The subject, a heavy draught gelding of 12 years, has been bought very cheap—"a true bargain," said the buyer. The horse, however, was affected with "immobility," he is a "dummy." His condition is noticed by the driver: he is dull, stands punishment without rebellion, but with good feeding its energy is stimulated and he does work for three weeks well. After a warm day he has a severe cerebral congestion with excessive dullness, sleepiness, stupid aspect, staggering gait, no fever. Bleeding, laxatives, mustard revulsion, and arecolin allow him to resume his work after a few days. Under the same influence of warm weather, hard work and heavy feeding, his symptoms become more marked, the automatism begins—abnormal position of the legs are taken and kept for a time, his countenance is stupid, but backing takes place yet normally, even when he is harnessed to a load. Treatment relieves him again; he is sold; works for several months; then relapses into more dullness; insensibility to the whip; he eats less; keeps the food carelessly and listlessly in his mouth, and yet backs up perfectly. He is sold for butchery. Autopsy: All the viscera of the thorax and abdomen are normal. In the cranium, the meninges are sound. The size, form and relations of the bulb, isthmus, and cerebellum are perfectly normal. The

cerebrum presents the left hemisphere much larger than the right; in enlarging it has displaced the smallest and pushed aside the chiasma of the optic nerves. On the inferior face of this left hemisphere is observed a spot which is irregularly rounded, greyish colored with whitish points, rough and hard to the touch. In the ventricle of this left lobe there is a mass, elongated, floating in the fluid contained within the cavity, and weighing 70 grammes. It has this aspect observed on the outside surface, viz.: greyish, with white spots, and of stony consistency. The ventricle itself was considerably enlarged to contain the growth. The right hemisphere was normal. The histological examination was not made. Three interesting points are noted by the authors: (1) the animal never had any nervous manifestations, vertigo, epilepsy, or paralysis; (2) he could back up to the end of his life; (3) the symptoms were mild in comparison with the size of the tumor.—(*Rec. de Med. Vet.*, Jan., 1904.)

ACUTE CEREBRAL CONGESTION IN A HORSE [*M. Fort*].—such affection is not common, and this case shows that hopes of recovery are always justified even in the worst case. After being three months at a stable of remount, a three-and-a-half-year-old colt is found one morning in one corner of his stable, pushing hard against the wall. His respiration is loud because of his head being much flexed on the neck. The fore legs are carried backwards under the trunk, the hind ones are stretched backwards as if the animal was starting a pull to move a heavy load. Pushed away from that position, he seems depressed, tired and sleepy; his head, much bruised, is carried low down; the penis hangs out of the sheath; urine dripping away by drops; the tail is slightly deviated to the right. Breathing is normal (16); the conjunctiva is slightly infiltrated; pulse very small, almost imperceptible; beatings of the heart strong; temperature $37^{\circ}8$ C.; pupil very much dilated; walk staggering. With difficulty he is taken to a large stable close by. He then stands for some time quiet, or at others suddenly pushes ahead with violence and at times by successive jerks. In some of these spells he falls down and remains without struggling. He also has more violent paroxysms, raises himself up, puts his feet in his manger and assumes most dangerous positions. This condition lasts until the afternoon, when he becomes more quiet, moving in a circle in the stable. Notwithstanding all precautions, the head is fearfully bruised. The next day the symptoms are about the same, but the spells of vertigo are less frequent—

three among them are very severe. The animal drinks easily, but refuses all food. The following day (the second since the attack) he is improved—the head is enormous, œdematous, and from the nose and mouth escapes a thick bloody liquid, with repulsive odor. All symptoms are better; no spells, but general sleepy and stupid appearance; he drinks freely, refuses all food. The third day improvement more marked; he eats a little. The fourth the condition is most satisfactory. In a week the animal is galloping in the field. After discarding abscess of the brain, meningitis, cerebral hæmorrhage and tumor of the brain, the authors considered the case as one of cerebral congestion, for which the cause could not be found. For treatment, there was almost none, except that indicated for the condition of the lesions of the head, and cold water applications. Bleeding, which might have been resorted to on the start, was too dangerous the first day and considered as not indicated afterwards.—(*Rev. Gener. de Med. Vet.*, Jan. 15, 1904.)

OSSIFYING SPINAL PACHYMEINGITIS OF DOG [*Prof. Sendrail*].—This case presents very interesting features. The dog has been suffering for months with pains, which were considered as rheumatismal, but grew worse notwithstanding careful treatment. At the last examination he presented the following conditions: He moves with difficulty, the back is arched, head carried low, neck and vertebral column stiff. The legs are ankylosed-like, flexion of the joints restricted, the dog walks with short steps, soon gets tired and lays down with great care and with howls of pain. The slightest touch is painful to him; it seems as if with it he received an electric shock. Tendinous and muscular reflexes are exaggerated; by testing them, spinal epilepsy is manifested. Later on the hyperæsthesia is replaced by paralysis; there is intestinal and vesical impotency; death takes place. At the post-mortem, an extensive thickening of the dura-mater is observed. In the thickness there are small elongated bony plates, which measure between 5 and 30 millimetres in length, 1 to 4 in width, 1 to 2 in thickness. They are in great numbers, distributed in the whole length of the spinal dura-mater from the bulb to the lumbar plexus; they are more numerous on the inferior face, where they are almost contiguous to each other; they surround the rachidian nerves. They are more or less flexible, yet hard and of a reddish color. The surface of the organ is smooth and without marks of lacerated adherence; it is perfectly free in the vertebral canal.—(*Revue Veter.*, Feb., 1904.)

A CASE OF CHOREA IN THE HORSE [*Ch. Bisanti and D. Castellani*].—This is probably the first case of chorea on record, besides those of the diaphragm, already known. A horse, five years old, of German breed, became sick with a severe attack of typhoid fever, which presented all the symptoms of the classical acute form. The treatment consisted in subcutaneous injections of physiological solution, salt water rectal injections, mustard on the chest, quinine and caffeine; milk, eggs, and brandy as diet. Towards the eighth day there was an improvement, more marked towards the twelfth, although there was still staggering of the hind quarters. On the sixteenth day he took half an hour outdoor walk, when all the functions were normal, the staggering still persisting. Three days later the hind legs were taken with peculiar actions, while the horse was in the stable. "These consisted in a rhythmical and alternate involuntary contraction. Three or four seconds after one foot touches the ground, the other contracts slowly until almost complete flexion is reached; then extension takes place in the same way until the foot touches the ground. Then up goes the other. It is rare for two contractions to occur successively in one leg." When the animal is made to walk, at first he moves stiff, the action of the legs is somewhat similar to the jerk of one having imperfect cramp at the stifle, but after a while the action is better, and if there is some stiffness, there is no more of the involuntary automatic contractions observed when the animal is at rest. These, however, return a few seconds after the horse is back in his stall. The most minute examination of the animal has been without result, even the exploration of the foot. The diagnosis of chorea is evidently justified. What is the origin? In all probability the attack of typhoid fever. It is also probable that a bilateral lumbar lesion of the spinal cord exists, judging from the even intensity of the manifestations on the right and left legs. The disease has now existed for three months, and, though somewhat attenuated, the symptoms have still all the characters of the beginning. No treatment has given any result. Iodide of potassium, pilocarpine, strychnine, mustard frictions, blisters, douches, massage, electricity, gave negative results.—(*Rev. Gen. de Med. Vet.*, Feb. 15, 1904.)

CONGENITAL ABSENCE OF A KIDNEY—CRYPTORCHIDY OF THE OPPOSITE SIDE IN A STEER [*Baillet and Sères*].—If some genito-urinary anomalies are not rare, the frequency of others is difficult to establish. The present case is among those.

Drs. Smutzer, Ulm, Prettnner, Gorig, and Morat have recorded cases which illustrate it in cattle and pigs. In man, one case out of 4000 is recorded by Henry Morris. These anomalies are overlooked during life, and their discovery is generally a surprise at post-mortem. In this case a steer killed at the abattoir, in good fat condition; it was found that the left kidney was entirely absent; there was no ureter on that side either. The right kidney was normal in coloration and consistency, weighing its average weight, 700 grammes. Its ureter was slightly dilated, the bladder normal. At the vesical trigone there is but one opening of the ureter. There were two suprarenal capsules. The anomaly of the kidneys seems to have affected the psoas muscles. The rights are normal; the lefts thicker, more convex, and they appear more developed, as if the absence of the kidney had allowed this growth. The right testicle had remained in the abdominal cavity, while the left was in the testicular envelope, atrophied. This last condition was not manifested by any sign during life.—(*Rev. Gener. de Med. Vet., Feb. 15, 1904.*)

BELGIAN REVIEW.

By Prof. A. LIAUTARD, M. D., V. M.

A FEW REMARKS ON THE USE OF CAROB IN THE FOOD OF HORSES [*Prof. T. Hendrickx*].—If opinions are about unanimous to admit the advantages of the addition of sugar to the daily ration of horses, they differ as to the modes of administration. Molasses is generally used, but as it is rather difficult to handle in nature, many compounds have been invented, which have had their advocates and their critics. Of course, this mode of feeding has its disadvantages: Prof. Moussu claims among them urinary troubles, digestive disturbances, etc. And, again, those compounds can be easily adulterated and their real nutritive value become very deficient. The author has suggested to one of his clients to try carob, the fruit of the locust tree, St. John's bread tree, which has the shape of a long bean, thick, pulposus, and containing about 45 per cent. of sugar. These beans are already used in feeding animals, and can be readily given in place of a certain quantity of oats. The experiments were tried on several animals—an old mare which did not work, two brewery horses which did a daily service trotting, four horses

doing light draught fast work, and two stallions of heavy draught doing their work walking. After a day or two of hesitation in partaking of the food, the animals got used to it, liked it, and did well under the régime. The old mare died from trouble not due to the feeding. As the black beans of the fruit may escape digestion on account of their hardness, it is better to crush them.—(*Annales de Belg.*, Nov., 1903.)

SCORBUT—ULCERATIVE STOMATITIS—TYPHUS OF DOG [*G. Hebrant*].—These three diseases have symptoms which are common to all and may give rise to error in diagnosis. The author describes the differential characters: *Scorbut*, observed in man, is characterized specially by hæmorrhages in the cutaneous dermis, on the surface of mucous membranes, and even between the muscles. There are also ulcerations on the gums, the teeth become loose and drop out—notwithstanding the absence of the essential symptom, the hæmorrhage, some veterinarians have described scorbut as a canine disease. The author has never seen such in dogs, and doubts its presence, or at least accepts it as very rare. *Ulcerative stomatitis*, on the contrary, is very frequent. It is observed in pet animals, old and fed on sweet things. The tartar of their teeth is the starting cause. It inflames the gums, which become soft, friable; a true ulceration is formed; there is ptyalism and a very offensive odor from the mouth, yet the general condition is good, and as the trouble is essentially local it soon gives away to proper treatment. *Typhus of the dog* is a general infection, due to a pasteurella. There is severe fever from the start, excessive prostration, low circulation, vomiting, diarrhœa, etc. Ulcerations appear on the buccal mucous membrane, and the tongue may slough off. The general symptoms, the condition of the stomach, and of the intestine, the enzoötic character and the high mortality allow us to differentiate it from simple ulcerative stomatitis.—(*Annales de Bruxelles*, Nov., 1903.)

FRACTURE OF THE CANNON IN A HORSE—RECOVERY [*Mr. Van Passen*].—The severity of fractures of the lower bones of the legs has, generally speaking, been exaggerated, and, nevertheless, the prognosis of these injuries depends on many circumstances which it becomes the practitioner to consider before coming to a conclusion. The specific characters of a fracture, its transversal or oblique direction, the integrity of the skin or its laceration, the more or less danger of infection, the age and the weight of the animal, etc., all those are elements of great importance to take into consideration. The fol-

lowing case shows the necessity of carefully considering the case before arriving at a fatal prognosis. A five-year-old thoroughbred mare shows lameness on the right hind leg, which is considered as of no importance. The next morning she is dead lame; the leg does not rest on the ground; the cannon is hot, painful, and crepitation is detected—there is a fracture about the upper and middle third of the bone, which is transversal. It is simple, and the ends of the bone correspond well to each other; the animal is young and healthy. A splint with bandage is applied; the animal is placed in slings, but as she lays in them, they have to be taken off and she is allowed to lie down and get up at her will, which she does with comparative ease. About six weeks after the accident, as the animal has been gradually resting her leg more and more and putting weight upon it, the dressing is removed. The leg is emaciated, and the lameness is much marked. By degrees, the lameness improves, and a month after is all gone.—(*Annales de Bruxelles, Dec., 1903.*)

GENERALIZED TUBERCULOSIS IN A MARE [*Telemaque Lunghit*].—On May 1, 1903, a mare of eleven years presents the following symptoms: Anorexia, general uneasiness, respiration agitated. Under expectant treatment she rallies some, yet is still uneasy. She micturates frequently and at intervals expels blood with her urine. The temperature is slightly elevated. The vaginal mucous membrane is red and inflamed. Examination of the urine reveals nothing. The temperature keeps on up and down; it varies between 1.5° C. to 2° C. Appetite is irregular. After a couple of weeks there is dyspnoea. Auscultation reveals increased respiratory murmur. There is no cough nor discharge. By antipyretic and antiseptic treatment, associated with iodide of potassium, there seems to be improvement. But soon the irregularities of the temperature return. The general condition is bad the animal loses flesh. Towards the third month, the hind legs begin to swell; there is albuminuria, the whole muscular structure becomes atrophied, the respiration is labored, the appetite is gone; the animal dies without a struggle. At the post-mortem the whole organism contains tuberculous lesions. The lungs, specially the right, are filled with masses of various sizes. The bronchial glands are tuberculous. The pleural cavity shows tubercles spread here and there. The liver has tubercles, disseminated and gathered so as to form large caseous masses; the peritoneum has grape-like pedunculated or infiltrated masses; the kidneys, specially the left, pre-

sent also tuberculous lesions, which are also observed in the hypertrophied ovaries.—(*Annales de Bruxelles, Jan., 1904.*)

LAMENESS OF THE RIGHT HIND LEG—NO DIAGNOSIS AND RECOVERY WITH INJECTION OF COCAINE AND MORPHINE [*Telemaque Lunghit*].—This animal has been lame for several months, the trouble being intermittent and more marked at times than at others. Notwithstanding several attempts at treatment, the animal kept on going lame, when the author was requested to see him. After careful inquiry into the history and minute examination, to assist in making the diagnosis, an injection was made of a solution of cocaine and morphine. Ten minutes later, of course, all lameness had subsided. Navicular disease was suspected and neurotomy was recommended, which it was agreed was to be performed the next day. But at that time there was a swelling at the place where the injection had been made the day before, and it was thought better to wait. After a few days, on reëxamining the horse, it was found that all lameness had subsided, the swelling was gradually passing away and subsided entirely. As to the lameness, it was also all gone, and after nine months has never returned. What was the cause?—(*Annales de Bruxelles, Feb., 1904.*)

WILD ANIMAL HYBRIDS.—A dispatch to the New York *Herald* from Paris, dated May 14, says: "A recent event in the animal kingdom, the first of its kind so far as France is concerned, has been attracting scientific as well as popular interest at Bostock's Hippodrome lately. This was the birth of two baby hybrids, the proud father being a magnificent lion and the mother a large Indian tigress. Strange to say, the she cub takes after the father as far as coloring is concerned, while the little brother favors the mother."

BOVINE TUBERCULOSIS.—Ravenel (in the *Medical News*) reaches the following conclusions: "At the present time the weight of the available evidence is in favor of the view that the chief source of infection in children, as well as in adults, is the human tubercle bacillus, and that the portal of entry is the respiratory tract. It has, however, been proven conclusively that the bovine tubercle bacillus is responsible for a certain proportion of the death from tuberculosis in children, and there is strong evidence at hand to show that the number of children infected from bovine sources is quite large. Whether the number be large or small, it is none the less our duty to guard against the use of milk from tuberculous cattle for food."

ARMY VETERINARY DEPARTMENT.

THE "NOCARD TREATMENT" OF GLANDERS.

By OLOF SCHWARZKOPF, V. M. D., Fort Assinaboine, Montana.

(Continued from page 167.)

After-Results.—Very properly the first inquiry will now be: How long did these horses remain apparently healthy, and how many of them, if any, developed glanders later on? After the fourth mallein injection on June 24, 1901, I remained with these horses almost constantly until July 1, 1902, when I proceeded to the United States. During this one year there did not occur any new cases of glanders among these horses, although they performed regular duty by which some of them were repeatedly exposed to new infection by marching through infected places or stopping there. But among the horses of two other troops, stationed at Vigan, P. I., which had not been subjected to the mallein test, occurred three sporadic cases in one troop and one case in another troop during this year. Whether this record justifies the conclusion that the horses of the infected troop were rendered immune against glanders by the repeated injections of mallein, I am rather slow to confirm, but the evidence before me as a whole pointed strongly towards such a conclusion. On the departure of our regiment from the Philippines, our horses were turned over to the 11th Cavalry, and so far I have not been able to get any other information than the general statement that no serious outbreaks of glanders occurred among these horses thereafter.

Hygienic Treatment Needed.—The second question to be answered will most likely be: what other treatment has been applied with these repeated mallein injections to induce these results? As of yore, we have still the "medicine-man" within our ranks, and some half-educated youngsters of the "new school" advised me at the time to "tone up" these horses as they had no faith in the mallein alone, while some anxious officers thought that an "English ball" might be good from the faint idea that aloes might expel the surviving glanders bacilli through the rectum. I met these intruders by requesting the colonel to issue an order forbidding "officers, enlisted men and civilian employers" to enter the veterinary quarantine station, and with my faithful farrier and three Filipino prisoners who took care of the horses, I was finally unhampered in the observations of the effects of this test. No drop of medicine of any

kind was used, because I wanted to determine what *mallein* would do, and not obscure the results by other medication.

However, circumstances helped me materially to apply most valuable hygienic treatment. "Run-down" in spirit and condition as most of these horses were, the perfect rest and seclusion of the quarantine, together with the final arrival of American oats and baled hay, worked almost wonders. To see these horses, that for more than one year had been subsisted on rice and grass, masticate our oats and hay was not only a pleasure, but its effect in regeneration of vigor was almost immediate, and soon I had to make more "hind-leg" room for them, as they commenced to kick each other. Treatment this was, but it was a physiological treatment, so to speak. That care, rest, and good food should go with repeated mallein injection in weakened horses is only a dictum of common sense, if the value of the infected horses warrants such enhanced expense. In the Army this question need not be considered, because our horses have an estimated value to the Government and in wartime a well-trained Cavalry or Artillery horse is well nigh priceless.

Some Pertinent Notes.—An analysis of these repeated injections of mallein brings out some points that merit particular mention. It goes without much saying that such injections, their proper recording, and the careful observation of the individual effects, entail labor. It may be blunt to say that it also implies exercise of superior judgment, and the proper interpretation of the details of the effects of the mallein certainly calls for a comprehensive knowledge of the pathology and bacteriology of glanders and the manufacture of mallein. None of us know it all, but I have seen such inexcusable blunders perpetrated by incompetent veterinarians, that I would not entrust such intricate work to a man whose only knowledge of mallein is that "it is a glycerine extract of the glanders bacillus." When will our second grade "alma maters" cease to preach such false doctrines!

The testing of such large numbers of horses cannot be done in one day, and they have to be divided into convenient numbers of ten to twenty or thereabouts, according to the contents of the vials and the assistance on hand for taking and supervising the temperatures. The first test on the 108 horses consumed six days labor. During the progress of the test and the summing up of the records many minor problems arise that have to be met by the individual veterinarian. It is not a mere reading of dead figures of the mallein charts that determines the re-

sults or answers the question whether a particular horse should be looked upon as still infected or not. His behavior as a whole, and the various manifestations of a normal or disturbed life in their endless detail all contain valuable signs that must be weighed in the scale of mind to find the proper balance.

Attention should also be invited to the fact that these injections could not be undertaken at the regular intervals of one month, as suggested by Nocard, but they were made as irregular as four to seven weeks to two months, and yet the entire result was favorable.

It is further important to note that six horses developed acute glanders or farcy within 3-9 days after the first mallein-test and three horses in about the same time after the second test, but none after the third and fourth injections.

Finally it should be reported that a number of horses reacting to the mallein tests had those peculiar hard, nodulous swellings of the submaxillary gland which with other symptoms have been considered as suspicious by all veterinary authors for two thousand years and more. These characteristic enlargements are not always present in reacting horses. If present, after repeated mallein injections, they become smaller and smaller, very gradually and very slowly, but quite perceptibly, if examined at intervals of a month or so. I examined a number of these horses just prior to my departure to note what had become of these enlargements and found that most of them had dwindled away to little knots of insignificant size, while in a few horses they were still easily detectable by a casual examination.

In the record of this mallein test it should be admitted that all the conclusions reached were solely based on clinical evidence, because no opportunity offered itself for any post-mortem examinations on those horses that had ultimately ceased to react to the mallein. To those brought up to think that there is no evidence but post-mortem evidence, the paramount question whether these repeated mallein injections actually produced a recovery from initial glanders, remains unanswered. Trained up to this idea myself in youth, I have yet made in the course of years some post-mortem examinations involving similar issues where the evidence obtainable was anything but clear and ultimate. I am thus inclined to believe that post-mortem evidence would show little, if anything more than cicatrices of healed glanders—ulcers, such as we all have clinically observed in the septum nasi in chronic cases of glanders. Of course, it is desirable that those of us who may have an opportunity to

make such post-mortem examinations by experimenting with the repeated mallein injections on worthless horses, should help us to settle this point. But I am personally convinced from the close and constant clinical observations of this larger number of horses subjected to the repeated injections, that we can achieve as good a recovery from a slighter affection of glanders as we accept the conception of recovery in many other diseases; while those cases that are beyond recovery—a limit that we have no means to determine exactly at present, as in other diseases—clearly present themselves by the same means as incurable by their rapid development into a fatal issue.

(To be continued.)

[From "Our Animal Friends," Official Organ of the American Society for the Prevention of Cruelty to Animals.]

THE ARMY VETERINARY DEPARTMENT.

For a year past the AMERICAN VETERINARY REVIEW has been giving considerable attention to the subject of the position and claims of the Veterinary Department of the United States Army. It requires no professional military education to enable a person of ordinary intelligence to see the vast importance of the Veterinary Department in any military establishment. To say nothing of artillery, no one will deny the immense importance of the cavalry service even in these days when the use of repeating rifles and other arms of precision has made cavalry no longer available for such charges, let us say, as those of Waterloo; and yet the efficiency of cavalry must depend quite as much on the skill and assiduity of veterinarians as on the same qualities on the part of those who are charged with the medical care of the men. Again, the trying experiences of the British troops in the South African War showed that the fate of armies, and therefore of nations, may depend upon their means of transportation, and, in South Africa, that meant the horses of the combatants. The Boer War might almost be said to have been a war of horses; for, while the Boers were practically all mounted on their ponies, the British troops were dependent upon horses for the transportation of supplies, without which no forward movement was possible. It is a well-known fact that the disabling of horses by the hard service of the campaign was one of the chief difficulties with which the British commanders had to contend, and a like cause of trouble might easily arise in the conduct of any war. But while horses are easily disabled,

many of their disabilities, if taken in time and skilfully treated, may be overcome with comparative ease. Surely, then, no laborious proof is needed to satisfy any reasonable man that the Veterinary Department of a military establishment is one of its most important parts.

Unfortunately, however, it has seldom been so considered. Veterinarians, as they are now called, were once called farriers, and were regarded simply as blacksmiths of superior skill, and of some experience in the handling of horses, sick or well. That they should be regarded or treated as the equals of commissioned officers did not occur to any one, and least of all to the medical officers of the army. Yet medical men might have been expected to remember that it is only a few generations since the surgeon was a *barber*, and that his rise out of that lowly office was by no means so rapid as it might have been. Down to quite recent times the appointment of veterinarians in the army was made with exemplary negligence, and even within the past few years men of little education and less character have been appointed to that part of the public service. Yet within the past few years veterinary surgery has been rising steadily in public estimation, and veterinarians have risen correspondingly in social standing. The change is due to the superior education of the men who engage in it, and the superior course of preparation which can now be obtained in veterinary schools and colleges under the instruction of men of acknowledged learning and ability. It is now no remarkable thing to see a graduate in medicine, a fully qualified M. D., devoting himself exclusively to veterinary surgery, and when he does so, he forfeits nothing in the way of social position.

In the army service are some of the best qualified veterinarians in this or any other country; but in the army they have no rank as commissioned officers, unless indeed it may be inferred from their admitted right to wear side-arms. In every other way they are inferior and subordinate to the commissioned officers, and the oldest veterinarian in the army must obey the orders of the youngest fledgling from West Point. Curious blunders are naturally made from this cause. Even farcy has been mistaken for glanders, and glandered horses have been allowed by ignorant officers to infect others in spite of protests from experienced veterinarians. At the same time, however, all army veterinarians are not so well qualified as they might be and ought to be. Notwithstanding the great improvement of veterinary schools, the *military* branches of veterinary science

are nowhere taught in this country, and as Dr. Schwarzkopf writes in the *VETERINARY REVIEW*, it is indispensable that an army veterinarian should know "how to treat quickly and successfully a case of colic on the march, when the horse, with heavy pack and arms, is rolling with pain in mud or on the rocky mountain side; how to sew up a dirty wound on the legs or other flexible part of the body, plaster it up and make the stitches hold out for a continued onward march; how to assist a severely lame horse to walk practically on three legs in the ruthless pursuit of an enemy where there is no safe place to leave him behind; how to remain calm at a profusely bleeding bullet wound in the midst of the confusion of an engagement; how to prepare a horse's foot on a rough mountain road when he has lost his shoe and there are no shoes on hand; how to make horse-shoes and nails of scrap iron, and make them stick, as was done in the Philippine campaign with a small portable forge brought on shore from a United States gunboat; how to control glanders and other contagious diseases in war, with constant movements of troops, where the conventional rules of veterinary sanitary science, so beautifully laid down in our textbooks, appear as an irony of fate and a ridicule to science." All this and much more exceptional knowledge ought to be possessed by every man who enters the veterinary service of the United States; and we are happy to say that an army school for farriers and horse-shoers at Fort Riley, Kansas, has just sent out and distributed among the cavalry and artillery of the army its first class of graduates, numbering about seventy-five men. That is good; but it is only a beginning.

Our sympathies are entirely with the competent veterinarians of the United States Army; with the incompetent we have no sympathy whatever; and therefore we are clearly of the opinion that, while reform is necessary, it must be begun from the foundation. No man is entitled to the rank, pay and privileges of an officer of the army unless he is a thoroughly qualified practitioner of the veterinary profession, and fairly entitled by education and behavior to the standing of a gentleman. To every man now in the veterinary service of the army, and having a record of five years' service, we would give the rank and pay of an officer, with the right of retirement at a fixed age which is enjoyed by other officers. And then we would admit no other men to the veterinary service until they should have passed a searching examination as to their character and qualifications, both personal and professional.

Into the details of this subject we do not presume to enter ; but we favor the improvement of the veterinary service of the army, the value of which, in our judgment, cannot easily be overestimated, even from the military point of view. We advocate the advancement of army veterinarians in rank, pay and privileges as the surest way to secure the services of competent and worthy men ; and this we desire, not only in the interest of the army and of the country, but on account of the enormous amount of animal suffering which the employment of skilful veterinarians would prevent or alleviate.

* * *

THE DIFFICULTIES OF PASSING THE ARMY EXAMINATION.

1003 CORONA STREET, DENVER, COLO., May 22, 1904.

Editors American Veterinary Review :

DEAR SIRs :—I am writing to ask you to publish this item as news. I took the examination for veterinarian to the U. S. Army in March. After spending a lot of money and trouble, the examination was held at Fort Logan, Colo., and consisted of a physical and mental examination, then horsemanship. This began on March 10, at nine A. M., consuming six hours a day and for two days seven and a half hours. This lasted for eight days, or until March 17, when it ended. The *Army and Navy Register* states that 18 men were eligible to take the examination throughout the United States, and that only seven finally took it ; but that not one single man passed the whole examination. There were and are now six vacancies.

I only mention this for the benefit of my friends and those who are thinking of taking it, so that they can draw their own conclusions from this, which may save them considerable money and work when one sees the small chances of passing.

The item of announcement of which I speak was the *Army and Navy Register* of (I think) May 14th. I have the clipping and could send it, but I want to keep it. . . . I am, yours fraternally,

WILLIAM W. YARD, D. V. S.

* * *

FATE OF THE PETITION TO THE WAR DEPARTMENT.

The following note explains the position at present of the petition of the Army Veterinarians :

FORT MYER, VA., May 20, 1904.

Editors American Veterinary Review :

DEAR SIRs :—I have the honor to inform you that the petition of the Army Veterinarians was placed on suspended file

(No. 516950), Adjutant General's office, and no action taken.

Very respectfully,

W. R. GRUTZMAN,
Veterinarian 15th Cavalry.

* * *

ARMY VETERINARY NOTES.

Dr. J. R. Jefferies, 7th U. S. Cavalry, will enjoy a leave for two months beginning July 1, 1904.

The 11th U. S. Cavalry having returned from foreign service in the Philippine Islands, Dr. Alexander McDonald has taken station at Fort Des Moines, Iowa, and Dr. J. H. Gould at Fort Riley, Kansas.

Dr. W. R. Grutzman, Fort Myer, Va., is mess-officer of the bachelors' mess, and besides had the honor conferred upon him to be elected Secretary and Treasurer of the Officers' Club. Anyone in the Army knows that these little honorary positions entail a good deal of work, so that he is a busy man outside of his professional duties.

"THE REVIEW keeps getting better all the time, and I would miss it very much should it fail to arrive."—(*Charles H. Canfield, D. V. M., Indianapolis, Ind.*)

THE ANTIVIVISECTIONISTS were again defeated in the Massachusetts Legislature on May 4, their bill being rejected by a vote of 35 to 90.

LICENSE TO PRACTICE IN NEW JERSEY.—The New Jersey State Board of Veterinary Medical Examiners will meet at the State House in Trenton, June 28th and 29th, to examine candidates for license to practice veterinary medicine, surgery and dentistry in the State of New Jersey. Applications may now be made to President William Herbert Lowe, at the office of the Board, Paterson. The examination fee is \$10, which must in all cases accompany the application.

CHAMPIONSHIP PRIZES AT LOUISVILLE TO BE WORTH \$1,000 EACH.—Eight championship prizes of \$1,000 each are to be awarded at the Louisville Horse Show in October. There will be two championships for saddle horses of the English, or walk-trot-canter type; two for gaited saddle horses of the American type; two for heavy harness horses and two for light harness horses. For sixty-nine show ring competitions Louisville will distribute \$30,000 in prizes.

THE "BLOMO" PATENTED HORSE FEED.

For several months there has appeared in the advertising department of the REVIEW a full-page announcement of the Blomo Manufacturing Company of New York, calling attention to the animal food bearing the above name. Although the composition of this food is pretty clearly indicated in their advertisement, the publishers of this journal have received so many letters from veterinarians throughout the country making detailed inquiries concerning it, that we have gone to some pains to place them in possession, not only of the composition of the product, a theoretical and scientific argument as to its fulfilment of systemic demands, but also the processes of its manufacture, which have been supplied, in answer to our application to the Blomo Company, by Mr. Andrew Cullen, their supervising chemist. Theoretically nothing seems lacking in the essentials of all those elements which go to make up an ideal balanced ration, while practically its popularity as a stock food in the large stables of the Eastern cities seems to leave no doubt but that the statements of Mr. Cullen are well justified. This reply to our letter of inquiry is in substance as follows :

Blomo is the blood-molasses feed that has been manufactured abroad for years. Three years ago American patent rights were purchased and a company organized in New York, which company has now been manufacturing the food for about eight months. It is composed of fresh blood, molasses, hay and oats, and a small percentage of barley, and has many favorable features. Animal albumen is by far more easily absorbed by the system than vegetable albumen ; so that eminent scientists have tried for years to find a way in which to preserve blood so that it could be used for food purposes. The solution of the problem was due to two Danish chemists, Clausen and Frederickson, who discovered that when they mixed molasses with fresh blood, the blood would remain sweet indefinitely. Before this discovery the only commercial method in vogue was to dry the blood with the aid of excessive heat ; that method not only injured the delicate tissue of the blood, but it reduced its digestibility very materially, and in addition it was found that as soon as the dried blood was exposed to the air it absorbed germs rapidly, which resulted in the generation of poisonous life in the

dried blood. After the water has been expelled from the blood by the Blomo Company's patent method, *there remains a solid that is over 99 per cent. pure protein, all of which is digestible.* Molasses has been discussed freely by the veterinary profession. It is now a well-known fact that *its hydrates of carbon are totally digestible.* While there is considerable nutriment in the cereals in Blomo Feed, the manufacturers look upon them principally in the light of an absorbent from which they secure a supply of fat, and in addition a means which will permit of their drying the blood and molasses without injuring the delicate tissues. The cereals also supply the important substance known as the fæces. In the manufacture of Blomo Feed all the albumen in the blood is retained; in addition, *all the curative and tonic properties of both the blood and molasses are fully preserved.* When the blood and molasses are mixed with the oats, barley and hay, they penetrate the cereal substance rapidly, so that the tender tissue of the blood is protected by the cellulose walls of the cereals, and the materials are passed through the driers and dried without the slightest injury. The advantage of this feed is, that in addition to the animal receiving more digestible nutriment than before, the nutriment is in such form that it is almost immediately annihilated and absorbed. The proteids of blood are conceded by all to contain nitrogen in its most easily digested form, and as the carbohydrates of molasses are already in the form of sugar, the animal economy is saved the expenditure necessary in order to extract the nutrients from within the cellulose walls of the cereal cells, as well as to transform the ordinary carbohydrates from starch into sugar, so that the animals are saved the production of considerable gas in the digestive tract. This renders the animal less liable to disease due to gas accumulations or explosions, it is also a help to those animals who have weak digestive organs. The blood in the feed keeps the intestines strong and healthy and the system takes up the proper amount of nutriment promptly.

Blomo Feed is manufactured as follows:

The blood and a certain portion of molasses are mixed together, the hay is ground into a flour and then mixed with the oats and barley; after all the cereal substances have been mixed they are ground together; the blood, molasses and cereals are then all mixed thoroughly and conveyed to the driers, where they are dried down to below 2 per cent. moisture. To this product is added more molasses that has been boiled for some hours; the whole mass is now thoroughly mixed once again,

dried and cooled off, and the product is ready for the market.

THE AVERAGE ANALYSIS OF BLOMO FEED IS AS FOLLOWS:

Total	Digestible
Fat 1.19	1.19
Protein 15.00	14.19
Carbohydrates 49.84	49.84

Notice that the co-efficients are 98 per cent. digestible.

MOTOR CARS MAKING NO INROADS ON COACHING.—That the season of 1904 should be the most successful in the history of coaching in America is peculiarly gratifying to all votaries of the horse as showing that the present vogue of the motor car, like the passing fad for the bicycle a few years ago, is making no inroads on the ancient glories of four in hand driving as a fashionable recreation. A falling off in interest, or rather in the manifestation of interest, in coaching would not have been surprising to any one this year, in view of the serious losses to which many wealthy patrons of riding and driving have lately been subjected through the failure of great speculative enterprises. Instead of the expected decline, however, every branch of the sport seems to have flourished as it never flourished before. In the first horse shows of the season the entries in the coaching classes were more numerous than in any past year. The number of private drags and breaks driven in Central Park this spring has been unprecedented. Instructors in four in hand driving report the busiest season in years. Fashionable carriage builders have constructed and sold more four horse coaches than ever before. Dealers in fine horses have disposed of more four in hand teams. The annual parade of the Coaching Club on May 7 established a new record for numbers, eighteen drags having been in line. On the same day there were thirty-seven coaches and breaks parked on the lawn at Morris Park; a greater array than was ever seen in this country, and one rarely equalled in England, excepting on Derby Day. The parade of the Ladies' Four-in-Hand Driving Club, with ten fair whips in picturesque beaver hats on the boxes of the coaches, was a never-to-be-forgotten feature of the season, and the club coach, driven daily for more than a month by the society women of the same organization, gave additional variety and interest to this greatest of coaching seasons. Public coaching in 1904 has kept pace with club and private four in hand driving, there being at the present time seven coaches on the roads about New York and passengers enough to keep them all well booked.—(*New York Herald, May 22.*)

COLLEGE COMMENCEMENTS.

CHICAGO VETERINARY COLLEGE.

The twentieth annual commencement was held in the College Auditorium on Tuesday evening, March 29, before an audience of more than three hundred, including ladies, friends of the faculty, alumni and graduating class. Dean Baker presided and the following members of the faculty were present: Professors Joseph Hughes, E. L. Quitman, J. F. Ryan, L. A. Merillat, G. M. Cushing, E. Merillat, J. D. Robertson, James Robertson, J. M. Wright, G. A. Lytle, and C. A. White. Prof. Baker delivered the introductory address, congratulating the class on their high attainments, etc. Prof. Hughes made the Secretary's report, stating in the course of his remarks that the session closing was without parallel in the history of the institution, whether viewed from the standpoint of numbers or from the character of the work accomplished.

The degree of Doctor of Comparative Medicine was then conferred upon the following gentlemen: Harvey Alexander Alcorn, Earlville, Ill.; James B. Audley, Delafield, Wis.; Winfield E. Bates, Williamstown, Mass.; Alvin Franklin Baver, Krumsville, Pa.; Albert Beck, Auburn, Ia.; John Louis Beer, Blue Island, Ill.; C. Reese Behler, Independence, Ia.; Charley F. Behrens, O'Fallon, Ill.; Bailey Elisha Chaney, Clinton, La.; John T. Chawk, Louisville, Ky.; Arthur S. Clark, Hubbardston, Mass.; William L. Cohenour, Jr., Pana, Ill.; Fred Otis Conover, Petersburg, Ill.; Samuel S. Deardorf, Lewiston, Neb.; Charles E. Dille, Villa Ridge, Ill.; Oscar Allen Diller, Dysart, Ia.; Ray M. Edwards, Knoxville, Ia.; Wm. Prince Ferguson, Grenada, Miss.; Fred J. Fisher, Petersburg, Va.; Henry C. Gardiner, Bozeman, Mont.; Geo. Archibald Handley, Waterloo, Ohio; Harvey T. Hahn, Stella, Neb.; Oscar A. Hansen, Denver, Colo.; Gawen Henry Harland, Duplainville, Wis.; William John Hartman, Toronto, Canada; Harry J. Hoyman, Stanwood, Ia.; Joseph M. Kaiser, Chicago, Ill.; Wm. Webster Lichty, Spring Grove, Ill.; Lewis A. Licking, Farmer's Retreat, Ind.; Elmer E. Lull, Ithaca, N. Y.; John D. Lyle, Sparta, Ill.; Jas. Kinsley Mason, Campello, Mass.; Geo. W. Minshall, Viroqua, Wis.; Charles Wm. Ninmann, Milwaukee, Wis.; Geo. W. Noble, Monroe, Wis.; George Norris, New York, N. Y.; Homer D. Pattison, Williamston, Mass.; Oscar Sylvester Phelps, Beaver Dam, Wis.; Thos. F.

Quinn, N. Adams, Mass. ; George Clavin Reese, Blakeslee, Ohio ; Edward Albert Rein, Chicago, Ill. ; Frank L. Roach, Maquoketa, Ia. ; John G. Schoeck, St. Jacob, Ill. ; Fred Allen Shepherd, Fairmount, Ill. ; Frank Lewis Skrable, Elberon, Iowa ; Roy Whitman Smith, Racine, Wis. ; Charles P. Soneral, Ludington, Mich. ; Martin Robert Steffen, Milwaukee, Wis. ; J. Fred Stoner, Chicago, Ill. ; Errold Sutter, Reynoldsville, Pa. ; Frank Sutton, Malden, Ill. ; James Rodney Taylor, Austin, Ill. ; Lacey Earl Thompson, Petersburg, Ill. ; Lawrence E. Thompson, Bellmore, Ind. ; G. Rolland Tomlinson, Chicago, Ill. ; Warren B. Wise, Sharon, Pa. ; Walter A. Wolcott, Appleton, Wis. ; Carl Henry Yoder, Woodland, Ill.

Prof. Quitman then delivered the medals to the successful candidates as follows : Best general average, gold medal, Dr. L. E. Thompson ; best examination in cattle pathology, gold medal, Dr. L. E. Thompson ; equine pathology, gold medal, Dr. R. M. Edwards ; anatomy, gold medal, Dr. G. H. Harland ; surgery, gold medal, Dr. F. O. Conover ; meat inspection, Dr. J. K. Mason ; lameness, shoeing, and physiology, Dr. G. H. Harland ; materia medica, Dr. J. F. Stoner ; dentistry, Dr. J. T. Chawk ; bacteriology, Dr. G. C. Reese ; helminthology, Dr. W. A. Wolcott ; chemistry, Dr. O. Hansen ; canine pathology, Dr. W. J. Hartman.

Dr. G. H. Harland read the class prophecy, while Dr. H. D. Pattison delivered the valedictory. The doctorate address was then given by Prof. E. Merillat, which was replete with excellent advice and good reasoning. Prof. Baker then closed the exercises by wishing the graduates Godspeed, and reminded them that they always have in their alma mater a loving friend, in whom they may ever confide.

Post graduate diplomas were issued to the following veterinarians on February 17 : Dr. C. F. W. Bauer, St. Louis, Mo. (Ontario Veterinary College) ; Dr. T. W. Chandler, Moline, Ill. (Chicago Veterinary College) ; Dr. G. A. Clark, Franklin, N. H. (Harvard University Vet. Dept.) ; Dr. G. H. Fay, Oakfield, Wis. (Chicago Veterinary College) ; Dr. H. Fulstow, Norwalk, O. (Ontario Veterinary College) ; Dr. C. F. Griener, Chicago, Ill. (Chicago Veterinary College) ; Dr. Arthur Hobbs, Calgary, Canada (Ontario Veterinary College) ; Dr. G. W. Kinsey, Wheeling, Va. (Chicago Veterinary College) ; Dr. Charles H. Perry, Worcester, Mass. (Harvard University Vet. Dept.) ; Dr. A. Robertson, Mt. Carmel, Ill. (Ontario Veterinary College) ; Dr. W. H. Turner, N. Amherst, O. (Ontario Veterinary College) ; Dr. E. J.

Walsh, Imlay City, Mich. (Ontario Veterinary College); Dr. C. G. Warner, Paducah, Ky. (Chicago Veterinary College); Dr. F. A. Wiltraut, Wilkesbarre, Pa. (Ontario Veterinary College).

The annual banquet given by the Trustees of the Chicago Veterinary College to the faculty and class was held at the Victoria Hotel, March 14. Over two hundred students and the entire faculty were present. Dr. A. H. Baker presided and Dr. John Dill Robertson acted as toastmaster. At the conclusion of the repast, the following programme was rendered: Piano selection, "The Gondoliers," Mr. H. H. Harz; "The C. V. C.," Dr. Joseph Hughes; selection, Chicago Veterinary College Quartette (Messrs. F. E. Brazie, R. F. Vermillya, R. C. Roueche, and G. R. Tomlinson); "Evolution of Class '04," F. L. Skrabbe, Senior; vocal solo, "Salts of the Sea for Me," Mr. R. F. Vermillya; "Bell Cows," G. M. Predmore, Junior; piano selection, "Iris," Mr. F. V. Matthews; "Freshman Class, 1903-04," R. F. Vermillya, freshman; vocal solo, Mr. Chas. Crowe; "The Veterinary Profession, Past," Dr. James M. Wright; cornet solo, "Love's Old Sweet Song," Mr. R. C. Roueche; "The Veterinary Profession, Present," Dr. James Robertson; whistling solo, Dr. G. M. Cushing; "The Veterinary Profession, Future," Dr. E. L. Quitman; harmonica selection, Mr. H. C. Rogers; "The Government Veterinarian," Dr. G. W. Lytle; class editorials, Messrs. Jerry Wolff and A. O. Lundell; "Modern Surgery," Dr. L. A. Merillat.

CORRESPONDENCE.

DR. STEWART REVIEWS DR. JOPLING'S INTELLIGENCE AND EDUCATION REPORT TO THE MICHIGAN ASSOCIATION.

KANAS CITY, MO., May 13, 1904.

Editors American Veterinary Review:

DEAR SIR:—The May number of the REVIEW, replete with good things for veterinarians to read, came to hand with usual punctuality, and has been read from cover to cover.

As some of the younger members of our profession who read the REVIEW (they all would if they knew its value to them) might get erroneous impressions concerning certain educational matters from reading the "Report of Committee on Intelligence and Education" of the Michigan State Veterinary Medical Association, page 185, a few remarks on this report might not be amiss.

The open-hearted and good-natured apology which introduces the report naturally forestalls sharp criticism, which the author anticipated might follow its publication. His pepper story indicates he thought to irritate some tender spots. Had the writer been fully informed I believe he would have omitted the disparaging remarks made about certain colleges, particularly the Iowa State College and Ohio State College, both of which receive generous State support and which maintain high standard courses of instruction.

The fact that the recent two-year colleges of the United States have all announced a requirement of three-terms attendance for graduation, should call for hearty approval and words of encouragement as relating to this phase of the educational problem.

While the writer professes to be a follower of Nimrod, he evidently failed to bag much knowledge (mostly hearsay) during his hunt for something to report. In no other way can his inferences and deductions be accounted for. *The Chicago Veterinary College Quarterly Bulletin* and the *Kansas City Veterinary College Quarterly* plainly announce that said publications are issued in the interests of the respective colleges, and have been sent to members of the veterinary profession as a courtesy. No proposal is contained in either of them requesting the reader to send his good money for the support or profit of the bulletin. No claim of merit or to furnish the profession a veterinary magazine is contained in either of them. It is difficult to see any foundation for the statement in the report that "it is careless in its use of the truth".

Investigation will show that these bulletins are in harmony with medical ethics, and not an innovation among scientific educational institutions. It is to be regretted that our esteemed friend, the Chairman of the Committee, did not find the contents of these publications edifying, nor the efforts of the several colleges to come up to the measure of his ideal, but in the light of an evident purpose to report something adversely, possibly with the expectation of stimulating a spirited discussion, there may be "method in his madness". It is to be hoped that veterinarians everywhere will investigate individually, as far as possible, the truth or falseness of the uncanny influence of the report, and if anything is found amiss, that they will offer friendly criticism and suggestions looking toward a correction of the same.

Very truly yours,

S. STEWART.

IOWA VETERINARY LAW.

We are indebted to Dr. J. H. McNeil, of Ames, for a copy of the following two amendments, which were secured at the last session of the Legislature. It would appear that the veterinarians of Iowa are now pretty well protected, and illegal practitioners can be fully prosecuted.

AN ACT TO AMEND SECTION TWENTY-FIVE HUNDRED AND THIRTY-EIGHT-i (2538-i) OF THE SUPPLEMENT TO THE CODE AND PROVIDE FOR REGISTERING WITHOUT EXAMINATION VETERINARIANS REGISTERED IN OTHER STATES OR IN FOREIGN COUNTRIES.

Be it enacted by the General Assembly of the State of Iowa :

Section 1. That section twenty-five hundred and thirty-eight-i (2538-i) of the supplement of the code be, and the same is hereby amended by adding thereto, the following :

(a) A certificate of registration showing that an examination has been made by the proper board of any state or foreign country, the holder thereof having been at the time of said examination a graduate of a legally chartered and authorized veterinary college, or veterinary department of any university or agricultural college, recognized as in good standing by the Iowa state board of veterinary medical examiners.

(b) A certificate of registration or license issued by proper board of any state or foreign country, may be accepted as evidence of qualification for registration in this state, provided that the holder thereof was at the time of such registration the legal possessor of a diploma issued by a legally chartered and authorized veterinary college or veterinary department of any university or agricultural college in any state or foreign country, and that the date thereto was prior to the legal requirement of the examination in this state. The fee for such registration shall be fifty dollars. (\$50.00)

Section 2. If by the laws of any state or foreign country, or rulings or decisions of the appropriate officers of boards thereof any burden, obligation, requirement, disqualification or disability is put upon veterinarians registered in any state or foreign country, or holding diplomas from any legally chartered and authorized veterinary college, or veterinary department of any university or agricultural college, recognized as in good standing by the Iowa state board of veterinary medical examiners, affecting the right of said veterinarians to be registered or

admitted to practice in said state or foreign country, then the same or like burdens, obligations, requirements, disqualifications or disability shall be put upon the registration in this state of veterinarians registered in said state or foreign country or holding diplomas from any legally chartered and authorized veterinary college, or veterinary department of any university or agricultural college recognized as in good standing by the Iowa state board of veterinary medical examiners.

* * *

Be it enacted by the General Assembly of the State of Iowa :

Section I. That the following be added to section twenty-five hundred thirty-eight-J (2538-J) of the supplement of the Code, "It shall be the duty of each person registered as a practitioner under this section, to pay to the secretary of the board an annual fee of one dollar, on or before June 1st of each year, as long as he shall continue in practice in the State of Iowa."

VETERINARY DIRECTOR-GENERAL RUTHERFORD, of Canada, reports a serious outbreak of malignant venereal disease (*maladie-du-coit?*) among breeding horses near Lethbrides Alta. He has ordered a thorough inspection of all stallion, and prescribed treatment. Dr. Rutherford also announces that compulsory dipping of cattle to eradicate mange will be instituted this fall.

TETANUS CURED BY A NEW METHOD.—In Gouverneur Hospital, New York, two boys have been cured of tetanus by injection of antitoxin serum at points where the peripheral nerves unite with those of the trunk—that is, in one case where the injury occurred in the foot, the injection was made in the groin, while the other boy, who had been shot in the hand, received his inoculation in the axillary region. When the injections were made, hope of recovery had been abandoned. The boys were convalescent in two weeks.

THE JAPANESE have of late years been making noted strides in medical science. It was Kitasato, a Japanese bacteriologist, who discovered the bacillus of tetanus. Another fellow countryman, Shiga, recently found the bacillus of dysentery, and although the remedy has not yet been found, the discovery of the bacillus is usually the prelude to that of the means by which to combat it. To a Japanese chemist, Takamine, also belongs the credit of having discovered adrenalin, possibly the most powerful chemical agent for the suppression of hæmorrhage.

SOCIETY MEETINGS.

AMERICAN VETERINARY MEDICAL ASSOCIATION.

5249 ADDISON ST., PHILADELPHIA, May 19, 1904.

Editors American Veterinary Review:

DEAR SIRs:—Very satisfactory progress is being made in arranging for the annual meeting of the American Veterinary Medical Association in St. Louis, August 16th to 19th, and there is every reason to suppose that the record of the Association for making each successive meeting better than the preceding one will be maintained. The Committee of Local Arrangements is not at this writing ready to make any definite report. However, on account of the wealth of facilities offered to them, their only trouble will be to make a selection from the many accommodations at their disposal.

The following is the literary programme as it has taken shape at this time:

"Mallein," Dr. H. F. Palmer, Detroit, Mich.

"Changes Incident to Pregnancy as a Justifiable Cause for Condemnation of Parturient, or Far-Advanced Pregnant Animals from a Meat Inspection Standpoint," Dr. G. R. White, Nashville, Tenn.

Paper (subject not selected), Dr. R. R. Dinwiddie, Fayetteville, Ark.

"The Treatment of Roup in Fowls," Dr. A. R. Ward, Berkeley, Cal.

"Some Observations on the Comparative Virulence of Pyrosoma Bigeminum," Dr. G. E. Nesom, Clemson College, S. C.

Paper (subject not selected), Prof. Dr. Johnne, Dresden, Germany.

"Creeps, an Osteomalacial Disease of Cattle," Dr. Joseph W. Parker, San Antonio, Texas.

"Immunization of Cattle Against Tuberculosis," Dr. Leonard Pearson, Philadelphia, Pa.

"When to Operate," Dr. L. A. Merillat, Chicago, Ill.

"The Cattle Mange Problem in the West," Dr. Geo. H. Glover, Fort Collins, Colo.

"Tropical Diseases of Horses Seen in the Philippines," Dr. Chas. H. Jewell, Manila, P. I.

"Needed Reforms in Veterinary Education in the United States," Dr. A. Liautard, Paris, France.

"The Possible Eradication of Glanders by the Use of Mallein," Dr. F. F. Brown, Kansas City, Mo.

"Quitters and Sidebones, and their Treatment," Dr. C. C. Lyford, Minneapolis, Minn.

Invitations have been sent through the office of the Secretary of State at Washington to the following governments to send veterinary delegates to our St. Louis meeting: Great Britain and Ireland, Sweden, Norway, Denmark, Holland, Belgium, Germany, Russia, Austria, France, Switzerland, Italy, Spain, Portugal and Japan. Secretary Hay gave the matter his personal attention and kindly offered some suggestions, which he thought would add to the effect of the invitations. With the strong endorsement of the State Department at Washington these invitations will doubtless receive serious consideration at the hands of the various foreign governments to which they have been sent, and it is to be expected that there will be a good foreign representation at the meeting.

The concessions made by the various transportation companies to the World's Fair are much more liberal than those in force at the time of the World's Fair in Chicago, and are such as to offer very strong inducement to everyone to visit St. Louis. These rates can be determined by consulting any railway ticket agent. A statement in regard to them will be made to the members in due time.

JOHN J. REPP, *Secretary*.

PASSAIC COUNTY VETERINARY MEDICAL ASSOCIATION.

The regular monthly meeting was held at 169 Paterson St., Paterson, N. J., May 3, 1904, with President Dr. Wm. Herbert Lowe in the chair. The meeting was called to order at 8.30 P. M. and the following members answered to roll-call: Drs. R. O. Hasbrouck, W. H. Lowe, Jr., W. J. Fredericks, Wm. Herbert Lowe, John Degraw, Augustus Berdan and J. Payne Lowe.

The minutes of the last meeting were read and approved.

The Secretary reported that he had received a letter from the Treasurer acknowledging the receipt from Dr. John R. Moller of five dollars, which was donated for the erection of the Nocard monument.

The Treasurer was unavoidably absent. The Secretary read a letter in regard to the matters of his office.

President Dr. Wm. Herbert Lowe will invite all the members of the Association as his guests at the first meeting in September to a banquet.

Dr. Augustus Berdan read a paper on a surgical operation for nasal discharge, caused by some foreign substances passing into the nasal cavity, caused by the removal of the second molar tooth. Upon operating it was found to contain an abscess and also diseased turbinated bones, which were removed and treated antiseptically and made a recovery in about two weeks. This paper was discussed by all members present.

Dr. J. Payne Lowe spoke about the passing of a tube through the nostril of a horse for the siphoning of the stomach in a horse suffering from acute indigestion, which had been demonstrated at a previous meeting, and this matter was thoroughly discussed by all members present.

Dr. Wm. Herbert Lowe, Chief State Veterinarian, had the troughs of the city of Paterson closed last August on account of glanders, and as the spread of the disease has been checked, and as there is no glanders in the city of Paterson at the present time, they will allow the watering troughs to be opened for public use again, and if any glanders develop they will be immediately closed.

It was moved and seconded that our next regular meeting be held at Dr. George W. Pope's office at the U. S. Quarantine at Athenia, N. J. Dr. Pope was also chosen to be essayist at this meeting.

As there was no other business to transact at this meeting it was regularly moved and seconded that we adjourn to our next regular meeting, June 7th, 1904.

WM. J. FREDERICKS, *Secretary*.

MASSACHUSETTS VETERINARY ASSOCIATION.

The twentieth annual meeting and dinner of this Association was held at Young's Hotel, Boston, Wednesday evening, April 27th.

There were twenty-two members present, and Dr. Ryder, of the Bureau of Animal Industry, as guest of the Association.

The following officers were elected for the ensuing year:

President—E. C. Beckett, M. D. V.

First Vice-President—Aug. S. Cleaves, D. V. S.

Second Vice-President—Daniel Emerson, M. D. V.

Secretary-Treasurer—F. J. Babbitt, M. D. V.

Executive Committee—Austin Peters, M. R. C. V. S., Benj. D. Pierce, D. V. S., Chas. Winslow, D. V. S., Alexander Burr, M. D. V., Chas. A. Boutelle, D. V. S.

After the business meeting, dinner was served at 7.30 o'clock, at the conclusion of which the President made some fitting remarks, ending by introducing Dr. L. H. Howard as toastmaster.

Dr. Howard responded, then calling upon Dr. Austin Peters as a representative of the Commonwealth of Massachusetts, he being Chief of the Cattle Bureau.

Dr. Elmer W. Babson, Secretary of the Board of Registration of Veterinary Medicine, was next called upon and responded by giving an interesting account of the work of the Board.

Dr. Langdon Frothingham, as representative of the Harvard Medical School, made some very interesting remarks, which were much appreciated by all.

Dr. Ryder, of the Bureau of Animal Industry, spoke for a few moments regarding United States inspection here and abroad.

Next Dr. Geo. P. Penniman was called upon as a representative of the American Veterinary College Alumni, who responded in a fitting manner.

Dr. Thos. E. Maloney responded as a graduate of the New York College of Veterinary Surgeons.

There were interesting remarks by many others.

At a late hour the meeting adjourned, and it was unanimous that the year just closed had been a most interesting and instructive one.

F. J. BABBITT, M. D. V., *Secretary*.

VETERINARY MEDICAL ASSOCIATION OF NEW JERSEY.

The veterinarians of New Jersey and neighboring States are anticipating a great meeting at Newark, on Thursday, July 14th. President William Herbert Lowe, Secretary Geo. W. Pope and the local Committee of Arrangements, are busy in making this semi-annual meeting a success in every way. Veterinarians of New York, Philadelphia and elsewhere, who can make it convenient to do so, are cordially invited to attend.

ROBERTS BARTHOLOW, A. M., M. D., LL.D., the eminent physician, professor and author, of Philadelphia, died May 10. His text-book on materia medica and therapeutics is standard in the English speaking world, and a favorite reference work among veterinarians. He was born in Maryland in 1831 and graduated from the University of Maryland in 1852.

NEWS AND ITEMS.

GLANDERS is said by the Worcester (Mass.) *Telegram* to be more prevalent in horses in that city than ever known before.

DR. A. S. ALEXANDER, V. S., who has been instructor in veterinary science at the Agricultural College, Madison, Wis., has now been made a full professor at that institution.

DR. ADOLPH EICHORN, B. A. I., is inspecting cattle for scabies on the Union Pacific Railroad between Kansas City and the Colorado State line.

DR. LEONARD PEARSON, of Philadelphia, Pa., has been elected a director of the Pennsylvania Society for the Prevention of Tuberculosis. Dr. M. P. Ravenel was chosen a vice-president at the same time.

HIGH PRICES FOR ARMY HORSES.—M. H. Tichenor & Co. have in hand an order to supply the United States Army with 550 cavalry horses. The prices to be paid range from \$175 to \$250. W. M. Marshall, who represents Tichenor & Co. in the transaction, recently bought forty-two horses for the Military Academy at West Point, paying \$250 around for the animals delivered.

VETERINARY CHRISTIAN SCIENCE.—Dr. W. A. Knight, Houston, Texas, sends the REVIEW the following story: "A veterinarian was recently called to a case of parturient paresis. The Schmidt treatment was applied and the veterinarian returned to his home leaving the request for a later report as to the condition of the cow. The owners became dissatisfied with the treatment and sent for a Christian Scientist, who responded at once, looked at the cow and walked away. In a short time the cow was up and apparently all right, and the owners gave the Christian Scientist credit for the cure. Texas to the front."

AT the annual meeting of the stockholders of the Indiana Veterinary College, held April 14, the following officers were elected: President, George A. Roberts, V. S.; Vice-President, Joseph W. Klotz, V. S.; Dean of Faculty, W. B. Craig, M. D., V. S.; Secretary and Treasurer, Ferd. A. Mueller, Ph.G., V. S. Trustees—Ferd. A. Mueller, Ph.G., V. S.; Samuel E. Crose, A. M., M. D.; Alfred S. Jaeger, B. A., M. D.; John E. Pritchard, M. D., V. S.; W. B. Craig, M. D., V. S.; George H. Roberts, V. S.; Joseph W. Klotz, V. S.; E. H. Pritchard, V. S.; Walter N. Sharp, M. D.; J. D. McLeay, M. D.; E. R. Keith, LL. B.; E. H. Katterheney, M. D.

AMERICAN VETERINARY REVIEW.

JULY, 1904.

EDITORIAL.

EUROPEAN CHRONICLES.

PARIS, FRANCE, May 15, 1904.

THE MUTUAL BENEFIT ASSOCIATION.—A few years ago I suggested to our *confidés* in America the formation of a mutual benevolent association, and I pointed out the great humanitarian benefits that could be derived from such an organization. The question seemed to attract but little attention, and yet it was not ignored entirely; it had found some thinking minds, who did not let the problem drop, and, before we knew it, it was brought forward by one of the presidents of the A. V. M. A., Dr. Winchester, and Dr. Dougherty, of Baltimore, urged the creation of an association by the presentation of a draft of by-laws at the fortieth annual meeting at Ottawa last year. The ball was started; discussions occupied part of the meeting, and finally the question remained open by resolution of the association. In a few weeks the forty-first meeting will be held in St. Louis; there is no doubt that the friends of a mutual benevolent association will meet and be prepared to push the good work forward. It has seemed to me that I could furnish them with weapons to defend their object.

* * *

The great difficulty in the realization of the work of such an undertaking is the question of finances. Will such association ever be able to keep to its promises? Will it ever have capital enough to be lasting? I know that our friends who urged the

formation of an association are already well provided with material to answer these questions by the information that they have obtained from similar organizations existing in other countries. I have lately seen the *comptes rendus* of the last meetings of two associations in Paris, and in them I have found figures which were so surprising to me that I felt it my duty to record them here.

For instance, the Association Centrale des Vétérinaires de France, which this year counts 131 members more than last year—1058 in 1903 against 1189 in 1904—has in December, 1903, 95,941 francs as a reserve fund, private donations to which raised it to 104,792 francs (say \$21,000). This association has existed since 1892.

The other society I refer to seems to be a local affair, as it has its seat in one of the western departments of France. It was founded in 1902 only, and counts to-day already 500 members. The object of the society is to collect at the death of each member a stated sum from each individual belonging to the association and turn it over to his heirs, widow or children.

After all, such association is nothing else than a savings bank, which is not costly, and brings a comparatively good sum when one dies. I know of a society which gave \$1,000 to the family of one dead member, who during his life paid in an average of \$13 a year. In supposing that he had joined the society when 21 years old, to lose money he would have had to live up to 98 years, as even at 97 the \$1,000 his family would receive would be the money he had paid during his membership.

A mutual veterinary society cannot be ignored, and should the A. V. M. A. decline its foundation, other humanitarians ought to work it up.

* * *

THE PHYSIOLOGY OF CRIB-BITING.—Numerous have been the theories presented by observers on crib-biting and wind-sucking of horses—as to their nature, causes, and physiology. The question has been again taken up by Dr. Malkmus of Hanover, and an account of his observations is published in the

Deutsche Thierärztliche Wochenschrift. In times gone by cribbing was considered as resulting from an eructation, expulsion of gases contained in the stomach ; but, of course, the anatomical construction of the stomach and of the cardia render this theory inadmissible. A second theory held that it was due to air being swallowed. But Dieckerhoff opposed it, saying that the position of the head and neck during the act of cribbing was very different from the act of deglutition of water. There is a complex condition which is incompatible with that of swallowing. After upsetting the theories so far advanced, Dieckerhoff gave the following definition : " Cribbing is a vicious habit which consists in an abnormal act of respiration, during which the horse rests his head or holds it temporarily in an almost vertical position, and by a strong inspiratory dilatation of the thorax, allows the introduction in the pharynx and larynx of a column of air, accompanied with a special noise. The introduction of air in the œsophagus and in the stomach does not take place in every instance."

So as to verify the correctness of this third theory, Prof. Malkmus has invented a special pneumograph to make a tracing of the movements of the thoracic cage. He observed, then, that during the act of cribbing the curve traced showed no other change than one break, indicating a strong and short movement of expiration and corresponding sometimes to the time of inspiration or again to that of expiration. Therefore, the theory of Dieckerhoff is not correct : Cribbing is not an inspiratory act. This break in the curve has no specific value. It is observed every time an animal is disturbed from a quiet condition to make a sudden energetic motion, such as to glance rapidly around it, to chase flies, etc. It results from the sudden contraction of the abdominal and dorsal muscles to fix the thorax or the vertebral column.

In all forms of cribbing there is a peculiar contraction of the cervical muscles, specially those which extend from the sternum and shoulder to the larynx and inferior maxillary. This contraction produces the fixity of the superior maxillary

and lowering of the larynx, acts which are facilitated by the resting of the inferior extremity of the head upon a surrounding object. In the wind-sucker, the superior maxillary is carried forward and downward. The inferior maxillary does not follow in the general movement; it remains a little backwards and as a consequence produces the opening of the mouth. The depression of the larynx and the fixation of the lower maxillary are realized by the contraction of the sterno-thyroideus, sterno-hyoideus, omo-hyoideus, etc. The depression of the larynx and lower jaw give rise to an opening between the base of the tongue and the soft palate. The air rushes in this open vacuum from the mouth and nasal cavities, and produces the noise heard during cribbing.

Prof. Malkmus gives the definition of cribbing as follows: "A vicious habit consisting in a sudden dilatation of the pharynx with noisy rushing of air into it, preceded by the steady fixed position of the head forward and the depression of the larynx"; and he concludes by saying that if cribbing is shown under different conditions, there are certain unmistakable symptoms that it is almost impossible to confuse with anything else.

* * *

THE DIPLOMA IN HYGIENE—THE EDINBURG SCHOOL TO REMOVE TO LIVERPOOL.—A short time ago, there appeared in the *Veterinary News and Bulletin* a little editorial notice announcing a rather important item in the veterinary world. The dean of the Faculty of Medicine of Liverpool University had made it known that the authorities of that institution had instituted a Diploma in Veterinary Hygiene, on parallel lines to that of Public Health granted to medical men. Of course, this was serious information, and gossip was harsh against the Royal College of Veterinary Surgeons not to have been the first to institute such a diploma itself. A little consolation was given by the suggestion that perhaps this diploma was unnecessary and that consequently the scheme would prove a failure.

And, yet, the programme to obtain this new diploma, *D. V.*

H., was properly arranged and announced. It was to be awarded only to candidates who possessed the registrable qualifications to practice veterinary medicine, and therefore were regular practitioners, M. R. C. V. S. They had to attend an approved course of study and pass an examination in hygiene, as applied to veterinary medicine; microscopy; comparative bacteriology, pathology, and parasitology; toxicology and jurisprudence; etiology of infectious diseases of animals; sanitary law and administration; sanitary reporting; reporting of cases of infectious diseases.

I do not exactly know what the curriculum of the veterinary schools of Great Britain is, but if all the branches which compose the new addition to the Liverpool University were not taught at those institutions, certainly their course was incomplete; and if they were there can be but little use for a new institution. Hygiene and sanitary medicine are important parts of veterinary education and have chairs in all European schools.

* * *

But that is not all. Scarcely had the excitement produced by the information I have just alluded to begun to subside, than another of greater importance found its way into the English papers.

The new veterinary college of Edinburg is to be removed to Liverpool in the early fall. Prof. Williams, for reasons entirely connected with the welfare of his institution and the elevation of the profession, abandons his birthplace, leaves Edinburg to go to Liverpool. This is considered by many in the profession as a good move, as an additional good omen for the future prosperity of the college; and, better facilities being offered, it is also proclaimed that a greater number of students will attend at Liverpool than at Edinburg. It is no doubt to the credit of Prof. Williams to have undertaken such a change. It is said that there may be some difficulties in operating it, because of objections from the Royal College, or on account of the charter, etc. Of course, of these I know but little, but, after

all, I am sure Prof. Williams knows pretty well what he is about, and even if, as suggested, the whole matter resolves itself on the question of financial improvement, I must compliment him. Private institutions have often been considered as money-making undertakings. This is an error, and if for philanthropy they are carried out for a number of years at a financial loss, there is no reason why steps cannot be taken to change this, especially when with it improvement in other directions can be obtained for the benefit of students.

* * *

There has been, however, another suggestion made in relation to this removal of the new veterinary college, viz., that it was the result of an understanding by which the college was to become affiliated with the University, the authorities of this institution having considered favorably plans presented by Prof. Williams. This idea, however, has received a flat denial from the learned principal of Edinburg, which he made before the Council of the Royal College. He said: "I have no intention of selling or bartering my college in any way with anybody or any company of people in Liverpool. I retain the New Veterinary College, as it has been ever since its foundation."

All these are very good; but cannot, at the same time, the question remain—with such an excellent school as that which Prof. Williams presides over, where the curriculum must and no doubt is most perfect and complete, of what use becomes the School of Veterinary Hygiene? Will an M. R. C. V. S. (Edinburg, Liverpool, Dublin or London) care for an additional D. V. H.? At that rate, veterinary titles will become as varied and much larger than those that are found in the United States.

* * *

RELATION OF VETERINARIANS TO ANIMALS.—To close this chronicle, let us have a little statistic, which I find is extracted from the *Fortschritte der Veterinar. Hygiene*, published by Dr. Nagorsky. It was made up for the preparation of the sanitary laws in Russia in 1902. It makes a comparison between different states of the number of veterinarians, number of

horses and bovines that each practitioner may have to care for and the area of ground he has to travel. In Germany there are 3,516 veterinarians, with 6,086 animals spread on a surface of 153 kilometres; in France 3,389 veterinarians for 4,863 animals on 129 kilometres; in Great Britain 2,698 veterinarians for 3,929 animals on 116 kilometres; in Austria 957 veterinarians for 10,710 animals on 312 kilometres; in European Russia 853 veterinarians for 49,343 animals spread on 5,036 kilometres; Hungary has 732 veterinarians for 9,043 animals spread on 444 kilometres.

I do not know if attempts have been made to establish similar statistics in the United States, but one of the officers of the Bureau of Animal Industry might undertake it with the assistance of all the colleges; the correct number of regular graduates could be obtained, the proportion of animals be established. The great difficulty might be in approximating the surface of ground where the animals would be.

* * *

There have been experiments made in some of our experiment stations in the United States with the use of molasses as food for stock. I would be thankful for any reports which have been printed if they be addressed to me here. A. L.

THE WORK OF THE B. A. I. APPRECIATED.

The recent annual meeting of the American Medical Association, at Atlantic City, N. J., was by long odds the largest and best from all points of view ever held by it, there being 2,894 registrations, about 600 in excess of any previous meeting. Many collateral associations held sessions in conjunction with it, and sectional work was the order of the day. In one section the Departments of Scientific Research of the Government were considered, and among them "The Bureau of Animal Industry: Its Service to Medical Science" was the basis of a paper by Dr. W. H. Welch, of Baltimore, Md. Among other things, he said that "this bureau had been established in 1884 for the purpose of conserving the animal industry by the study and control of

the diseases of animals that caused the greatest losses. Diseases affected animals just as they did human beings, and their pathology was the same, consequently their study threw much light on the science of medicine. Some of the results of the scientific researches of the staff of the Bureau of Animal Industry had been the eradication of pleuro-pneumonia of cattle by killing both the diseased animals and those that had been exposed to infection, which effected a saving of millions of dollars. Foot-and-mouth disease had been eradicated in a similar way. A study of hog cholera had led to the finding of its bacillus, which had pointed the way to the research study of immunity. One of their most brilliant attainments had been the control of Texas fever by the discovery of the microörganism, a protozoal parasite which was conveyed by the cattle tick. They had collected important information about rabies, and had studied animal parasites and taken measures to exclude the introduction of Oriental parasites into this country. They had been studying tuberculosis for over ten years. They had discovered that immunity in cattle could be attained by injecting attenuated cultures. They had investigated Koch's theory of the transmission of tuberculosis and had proved that cattle could be infected by human beings, and it seemed that the reverse might be possible. He hoped that national legislation might be secured by which the Government would take as great interest in the study of human disease as it had shown in the study of animal disease."

Dr. D. E. Salmon, Chief of the Bureau, showed the interdependence of the two branches of medical science in his remarks on "The Service of the Medical Profession to the Bureau of Animal Industry," saying that he had been engaged in the work of this bureau for twenty years. He had found that no matter how useful and effective the work might be, it needed the support and encouragement that could be given from outside sources. He proceeded to explain their methods of protecting the food supply by preventing animal diseases and by insuring a bountiful supply of food for the future. They maintained stations for the inspection of all animals coming into or going

out from this country. All animals in large abattoirs were inspected before killing and after they were dressed. That such supervision was absolutely necessary was shown by the fact that out of 37,000,000 cattle inspected annually, 65,000 were unfit for use as food, and 18,000,000 animals had been shipped under supervision and the cars that they occupied disinfected afterward. This work was met by enormous opposition from commercial interests. It very often seemed that there was no conscience and no philanthropy in commercial life. In the investigation of disease, they were constantly met by those who were opposed to experimental work on animals, entirely losing sight of the great ends that were furthered through this means. There was a never ending battle to be waged with this class of people, and here the medical profession could give great assistance to the bureau. The freedom of the investigator must be preserved if important problems were to be solved that would secure a pure and abundant food supply and help the science of medicine as well. The medical profession should support this work by assisting to secure the right to use the most effective remedy for the eradication of disease, and in the right to produce pure immunizing agents. This meant a continual conflict between commerce and philanthropy, and the moral support of the medical profession would be of great assistance to the cause of philanthropy.

THE EXISTENCE OF RABIES.

It is peculiarly annoying to scientific medical men to read at frequent intervals interviews in the daily press with officials of the Society for the Prevention of Cruelty to Animals in which they utterly ignore the conclusions of the medical world in regard to this disease, and give utterance to opinions in direct antagonism to proven facts. That such a disease as rabies does exist to a considerable extent in this and almost every other country is no longer denied by any medical man who is open to conviction and who gives any credence to the evidence that is constantly placed before him, even though he has failed to come in

contact with the disease in his daily practice. That a layman so well posted upon animal diseases as the President of this Society undoubtedly is, should set up his opinion against the overwhelming evidence presented by the Federal Bureau of Animal Industry, which has very thoroughly investigated the subject and published its conclusions, accompanied by the data by which such conclusions were reached, is incomprehensible. And yet we find an interview with President Haines in the New York *Herald* of recent date in which the admission is guardedly made that there *is* such a disease as rabies, but that the chances of any living person ever coming in contact with it is extremely remote. To substantiate this he states that his inspectors have never met with a single case in the many years that they have done duty in New York City. And, yet, almost every veterinarian in that territory diagnoses the disease frequently, some many times each year. The merest tyro in veterinary science understands that there is no connection between the frequent cases of convulsions in street canines and true rabies; that there will be dozens of instances where dogs are attacked by cerebral congestion (due to excitement, teething, distemper, indigestion, and many other causes), and which bring on a train of symptoms which citizens and the police distort into the meaningless cry of "mad dog," where there is a single case of rabies; that there is very little similarity between the symptoms of the two conditions. But when a gentleman holding so high a position as the head of such an organization as the Society for the Prevention of Cruelty to Animals treats the subject with such flippant ridicule as is shown by the interview in question, it is time that he was disciplined by the veterinary profession or else be induced to cease such misleading statements for the public mind. To those who place credence in his statements, the absolute disregard for the bite of a dog might result in the progress of the toxæmia produced by the saliva of a rabid animal to a point where nothing could be done of a preventive nature, and a life so sacrificed would be directly dependent upon his mischievous remarks. As evidence of the utter fallacy

of such a contention we draw attention to a paragraph found in the *New York Medical Journal*, of June 4. Will President Haines please stick a pin in it, and, as his excellent magazine and official organ, *Our Animal Friends*, gathers many items of interest concerning animal diseases, it is quite at liberty to reproduce it in its next issue :

"*Hydrophobia*.—On Thursday, May 26th, a dog bit two children at Thirty-ninth Street and Armour Avenue, Chicago. The director of the laboratory instructed the physician to have the dog tied up and carefully watched. On Friday night the dog died with all the characteristic symptoms of hydrophobia. The animal was brought to the laboratory on Saturday morning and, upon a post-mortem examination, a diagnosis of hydrophobia was verified beyond doubt. This is the second dog in two weeks on which the laboratory has made a diagnosis of hydrophobia. The first one was killed, and it was uncertain as to whether it was hydrophobia. A number of animal experiments had to be made and it took nearly two weeks to arrive at a diagnosis ; but the last dog, held according to instructions from the laboratory, died in a few days, and a positive diagnosis was then immediately made without any trouble, and treatment instituted a week earlier than was possible had the dog been killed. Rabies is unusually prevalent throughout the country at present. Seven cases were admitted to hospital in one day recently in the city of Baltimore."

ARMY VETERINARIANS are very much in earnest in their desire to improve their status in the service. No sooner was it known that their petition to the War Department had been placed upon the file of oblivion than two more petitions were gotten under way. In the "Army Veterinary Department" this month one of these documents will be found, with a commentary explaining its provisions. This manifestation of undaunted spirit is very commendable in our military colleagues, and we are just as sanguine of their ultimate success as we are certain of the justice of their demands.

ORIGINAL ARTICLES.

FOWL CHOLERA.

BY ARCHIBALD R. WARD, D. V. M., BERKELEY, CALIFORNIA.

(From *The Laboratory of Veterinary Pathology and Bacteriology, University of California.*)

Although "the cholera" is frequently mentioned in poultry literature, very few opportunities to make a conclusive diagnosis have been afforded American pathologists. Salmon¹ studied a disease in North Carolina that resembled the fowl cholera of Europe, but, owing to the embryonic condition of bacteriological methods of the period (1880), did not present conclusive evidence of the identity of the disease with that of Europe. Moore² obtained sick and dead hens from three outbreaks of a disease called cholera, but the one observed by him was not the true fowl cholera. The name infectious leukæmia has been assigned to the disease by Moore. ³Friedburger and Fröhner, Hayes' translation, use the names fowl cholera and fowl typhoid as synonyms in their description of the disease, commonly known by the first mentioned name. Curtice⁴ has very recently published a bulletin dealing with the disease described by Moore, but calls it fowl typhoid. Higgins⁵ has reported an outbreak of the true cholera in Canada.

Opportunity has not been afforded to students of sanitation for observations upon outbreaks of fowl cholera in America, with trials of sanitary measures. This may be partly charged to the familiar disinclination of owners to disclose the existence of an infectious disease among their stock, and partly to ignorance of the proper quarter to which they could appeal for aid. Consequently the opportunity recently enjoyed to study an extensive outbreak of fowl cholera was regarded as important in affording an opportunity to make a field test of the means necessary for its control. Furthermore, considerable interest surrounds the question of the identity of the disease, on account of the very restricted number of cases in which the existence of

the true fowl cholera has been proven in America. Some observations upon the nature and methods for the control of the disease are submitted herewith.

Symptoms.—The yellow color of the urates in the droppings is the first noticeable symptom. The discharges frequently cling to the feathers below the vent. Diarrhœa appears later. The character of the dung varies considerably in color and consistency. Sometimes it consists of a pasty, greenish mass, or a brownish red mucus, or a viscous transparent fluid in any case, mixed with yellow urates.

The sick fowl gives evidence of its condition by an unnatural attitude of the feathers, and by a disinclination to move about as usual. None are observed to eat during the later stages of sickness. Thirst is frequently present, for fowls are observed to drink copiously in the advanced stages. A mucous discharge from the mouth is occasionally noticed. Towards the end drowsiness is very marked. The temperature varies from 109°–112° F.

In the majority of cases in which the time of exposure to infection was known, death occurred within three days. Sickness was seldom noticed more than twenty-four hours previous to death. All the cases observed were of the acute type. Observations demonstrated that the disease could sometimes produce death in eighteen hours, including incubation period. The fact that more deaths occurred on the roosts at night than during the day time is noticeable. Some hens were found dead upon the nest.

At death, or some hours previous, the comb is observed to take on a dark purple color, but not always, for often it appears pale and bloodless.

Lesions.—A congestion of the bloodvessels of the liver, kidney, mesentery or intestines is noticeable to some degree in all cases. Punctiform hæmorrhages are found upon the heart with almost absolute uniformity. The liver is very frequently marked with punctiform whitish areas of necrosis. Stained sections show these necrotic foci throughout the substance of

the liver and besides reveal a congestion of the bloodvessels of that organ. The next most striking lesions occur in the first and second duodenal flexures. The mucosa is deeply reddened and studded with extravasations, varying in size, but seldom exceeding one millimeter in diameter. These involve the intestinal coats to an extent that makes them distinctly visible on the peritoneal surface. The contents of the duodenum consist of a pasty mass, more or less thickly intermingled with blood clots. The intestinal contents sometimes consist of a cream colored pasty mass, or may be brownish red or even green in color. Lesions are very rarely observed in other portions of the intestines. The ureters are noticeable in practically all cases by reason of the yellow colored urates that they contain. The nasal cavity, pharynx and oral cavity frequently contain a viscous mucus, probably regurgitated from the crop.

The field notes on twenty-one post-mortem examinations reveal reference to the hæmorrhages upon the heart in twenty-one cases; punctiform necroses of liver, fifteen cases; hæmorrhages in duodenum, seven cases, and discoloration of skin in six cases. The presence of a gelatinous exudate within the pericardium was noted twice. A fibrous exudate in the pericardium occurred the same number of times. Hæmorrhages in the peritoneum other than those visible through the mucosa of the duodenum occurred but twice. In one case hæmorrhages were abundantly scattered throughout the muscles of the trunk and legs.

Two turkeys fell victims to the disease. The symptoms and lesions did not differ markedly from those in hens. Notes on these cases are submitted.

October 14.—Hen turkey observed to be sick. Temperature about two hours before death, $112\frac{3}{4}^{\circ}$ F. No reddening of skin. Heart muscle contains some punctiform hæmorrhages. The cæca, mesentery and intestine are covered with a yellowish fibrinous exudate. The intestines contain dark, pasty fæces. The vessels on the peritoneal surface of the gizzard are hyperæmic. The lungs, proventriculus, intestines, kidneys and spleen are not visibly altered.

October 14.—Gobbler, found soon after death. No discoloration of skin. Lungs are congested and dark red in color. The dorsal aspect of the lungs is covered with a gelatinous exudate, which liquefies upon exposure. The œsophagus and crop are normal. The proventriculus contains a greenish, transparent gelatinous substance mixed with blood clots. The gizzard contains a few blood clots. The mucosa of the intestines, as far as the cæca, is congested. The duodenum contains yellowish, pasty mucus with occasional clots of blood. The cæca are distended with material of normal appearance. Vessels of peritoneal surface of the duodenum and of mesentery are congested.

Etiology.—Culture media implanted from the liver, spleen, kidneys and heart blood of fowls and turkeys yielded cultures of a bacterium possessing the characteristics of the *bacterium septicæmiæ hæmorrhagicæ* group, a fact of importance in definitely establishing a diagnosis.

Fowls inoculated with cultures, by ingestion, subcutaneous or intravenous inoculation, died in from one to three days, with symptoms and lesions similar to the naturally infected cases. The organism was shown to be pathogenic to rabbits, guinea-pigs and pigeons.

Blood Counts.—In comparing the lesions of infectious leucæmia and fowl cholera, Moore⁷ has pointed out the desirability of a study of the blood in the latter disease. Consequently advantage was taken of the opportunity to make blood counts as tabulated below.

TABLE I.

Blood counts of fowls infected by ingestion and infected naturally.*

Fowl.	White.	Red.	Remarks.	Temperature.
No. 3,	23,000	2,290,000	3 days after exposure to infection.	112 $\frac{3}{5}$
" 3,	20,000	2,800,000	4 " " "	110 $\frac{3}{5}$
" 6,	37,000	3,930,000	3 " " "	110
" 8,	87,000	4,490,000	3 " " "	109
" 8,	101,000	2,960,000	4 " " "	108
A,	58,000	1,710,000	Naturally infected.	109
B,	45,000	1,925,000	" "	

* Details of the methods of infecting these fowls are given on page 332.

TABLE II.

Blood counts of apparently healthy fowls.

Fowl.	White.	Red.
No. 11,	24,000	2,980,000
" 12,	26,300	2,987,000
" 14,	36,000	3,115,000
" 15,	52,000	3,980,000
" 16,	61,000	3,920,000
" 17,	30,000	2,380,000
" 18,	24,000	3,620,000

In the case of No. 8, a marked diminution of the red corpuscles and the increase of the white corpuscles is noticeable. A comparison of the counts of fowl A and B with three normal counts, would lead to the conclusion that a decrease of red corpuscles occurs in cases of natural infection.

TABLE III.

Changes in the blood counts of fowls inoculated with cultures of the fowl cholera organism.

Fowl.	White.	Red.	Remarks.	Temperature.
No. 11,	24,000	2,980,000	Healthy fowl,	108 $\frac{1}{5}$
			23 hrs. after inoculation,	
" 11,	19,000	3,380,000	Died 2 hrs. later.	111
" 12,	26,300	2,987,000	Healthy fowl,	108 $\frac{1}{5}$
			24 hrs. after inoculation,	
" 12,	27,000	3,500,000	Died next day.	108 $\frac{1}{5}$
" 13,	129,000	3,300,000	Before inoculation.	108 $\frac{1}{5}$
" 13,	142,000	3,310,000	24 hrs. after inoculation.	107 $\frac{3}{5}$
			Died following day. Post-	
" 13,	257,000	3,046,000	mortem showed tubercu-	
			losis and cholera.	108 $\frac{2}{5}$
" 14,	36,000	3,115,000	Healthy fowl. Inoculated,	
			but died before next day.	109
" 16,	61,000	3,920,000	Before inoculation.	
" 16,	15,000	1,880,000	36 hrs. after inoculation,	
			Died night following.	
" 17,	30,000	2,380,000	Before inoculation.	
" 17,	22,750	1,590,000	36 hrs. after inoculation.	
" 17,	14,500	1,700,000	48 hrs. after inoculation.	

The figures for Nos. 11 and 12 reveal no marked change in the relative number of corpuscles during the short course run by the disease in these cases. No. 13 shows a marked leucocytosis in avian tuberculosis, increased by infection with cholera without disturbance of the numbers of red corpuscles. No other fowl in the list showed lesions of tuberculosis or other disease, upon post-mortem examination. Nos. 16 and 17 show distinct decrease of both classes of corpuscles. Fowls 8, A, B, 16 and 17, furnish evidence that a marked diminution of red corpuscles may occur. This fact accounts for the pale appearance of the blood commented upon by some observers.

In all cases Toisson's fluid was used for diluting in the pipette. During the counting there were noted bodies, resembling the red corpuscles, but somewhat smaller, and unlike them, stained blue. They occurred singly sometimes, but more often in clusters, which fact occasioned some embarrassment during the leucocyte counts. They occur both in normal and pathological blood. In mounted specimens of fresh blood they occur in clusters and show a refractive with sharply-defined border, surrounded by cytoplasm with an ill-defined border. The protoplasm is deficient in amount as compared with the red corpuscles, and among the clusters apparently free nuclei are observed. With the Wright Jenner stain the nuclei behave like those of leucocytes, while the protoplasm takes on a pale blue color. The cells quite closely resemble those of the red corpuscles, except that some are more narrow and others smaller.

Moore⁶ has mentioned the fact of red corpuscles staining in Toisson fluid. Under the designation of red corpuscles, he has pictured cells morphologically identical with those just described. The present writer has regarded the bodies in question as atypical red corpuscles and has ignored them in the blood counts. In one specimen of pathological blood in which the writer fancied that they were more numerous than in normal blood, they were counted with great difficulty. In this instance 400 squares were gone over and the conclusion reached that the sample con-

tained 54,000 per cmm. Phagocytosis in specimens of mounted fresh blood was not observed.

Conditions Surrounding Outbreak.—The poultry ranch upon which the disease was found was stocked with about 3,000 fowls, distributed over several hundred acres of land in colonies containing about 175 fowls each. Each colony was supplied with two roosting houses, a laying house, grain feeding hopper, feeding troughs and drinking water fountain. The several colonies were near enough together so that the hens venturing farthest abroad during the day would intermingle with those from other colonies, a fact of significance in relation to the spread of the disease. Hens have been observed to go several colonies from home, attracted by the feed in the wagon from which the daily rations were distributed.

The introduction of the disease among the fowls could be readily understood, for a neighbor on an adjoining ranch had lost 2700 fowls during the months of July, August and September just preceding. Other neighbors had suffered severe losses. The outbreak of the disease was brought to notice by 12 dead hens found under the roosts one morning. On the second day as many more were found, after which deaths practically ceased for a week, when losses again occurred at the rate of six to ten a day. In three weeks from the start the disease had spread to four adjoining colonies, the total number of deaths for that time being about 100. The owner became thoroughly alarmed at this juncture and appealed to the Agricultural Experiment Station for advice.

Preventive Measures.—A survey of the situation revealed many grave defects in the sanitation. Measures designed to control the various sources of infection were put into operation as promptly as circumstances indicated the necessity for them. No information was available concerning the relative importance of the various possible sources of infection. Consequently the preventive measures were experimental in nature to a certain extent and were elaborated somewhat from time to time. Table V on page 334 shows the date of inauguration of the va-

rious measures, with their effect upon the death rate. The dead fowls, in many cases, were partially consumed by the survivors owing to the delay in collecting the dead. The serious importance of the eating of the dead is illustrated by an experiment performed with a view of determining the length of time elapsing between exposure to infection and death. Ten cockrels were selected from a colony on the ranch that was free from disease and as subsequently events proved, remained free during the outbreak. All were placed in a crate and were allowed to eat freely of the entrails and flesh of a fowl dead of the cholera. The dates of death are recorded in the following table:

TABLE IV.

Deaths after eating infectious material.

Fed viscera of dead fowls:		Oct. 11.	12,	13,	14,	15,	16,	17,
Number	1,		Died					
"	2,			Died				
"	3,							Died
"	4,			Died				
"	5,		Died					
"	6,					Died		
"	7,			Died				
"	8,						Died	
"	9,				Died			
"	10,		Died					

As each one died an examination of the internal organs was made, and conditions were found identical with cases that contracted the disease naturally. The experiment shows that the disease is very rapidly fatal, a large percentage dying within three days after exposure. The results demonstrate most emphatically the necessity for the immediate disposal of dead fowls to prevent the infection of other fowls by eating their carcasses.

The practice of slaughtering all hens sick of the cholera was inaugurated immediately but, as the disease was noticeable for only a short time before death, many had the opportunity to spread infection before detection.

On October 17th, (see table) it was decided to kill every hen that showed the slightest symptoms of any sort of disease. It

was found very desirable to visit the roosting houses at day-break, for at that time the sick ones are almost certain to be found lingering in the houses. The early visit also permitted the collection of the dead before the living could become infected by eating portions of them.

The dead were burned or buried deeply as convenient. Scrupulous care was exercised to dispose of the dead before the living fowls could molest them.

The fowls were fed from open troughs or from the ground which permitted contamination of the feed directly by droppings or by material tracked in from the roosting houses. The undesirable method of feeding was discontinued. Troughs were made so as to permit the fowls to reach the head in, but to prevent the feet from coming in contact with feed.

On account of the danger to the fowls from the contaminated ground about the houses, the five infected colonies were moved to another part of the ranch.

It was deemed necessary to spray all the poultry houses on the ranch, both for disinfecting and for minimizing the number of parasites that might be instrumental in spreading infection.

A disinfecting solution recommended by Laplace was selected for spraying the roosting and laying houses. Dr. D. E. Salmon describes its preparation in Farmers' Bulletin No. 24, U. S. Department of Agriculture, as follows :

Crude carbolic acid $\frac{1}{2}$ gallon.

Crude sulphuric acid $\frac{1}{2}$ gallon.

"These two substances should be mixed in tubs or glass vessels. The sulphuric acid is very slowly added to the carbolic acid. During mixing a large amount of heat is developed. The disinfecting power is heightened if the amount of heat is kept down by placing the tub or demijohn containing the carbolic acid in cold water, while the sulphuric acid is being added. The resulting mixture is added to water in the ratio of 1 to 20. One gallon of mixed acid will thus furnish 20 gallons of a strong disinfecting solution, having a slightly milky appearance."

A small bucket spray pump was used to apply the disinfectant. The spraying outfit, together with a barrel of the disinfectant were moved on a sled from one colony to another. The liquid was sprayed upon the floor, sidewalks and perches of the roosting houses, and upon the floor and side walls up to the nests in the egg houses. The ground was sprayed for several feet around the houses. Special care was paid to the shady side where the chickens spent considerable time during the day. The infected colonies were all sprayed daily from the 9th to the 15th of October, inclusive. All the other colonies were sprayed daily, except Sunday.

The mixture was found undesirable for continued use, because of the irritation caused by inhaling the spray, and because of the corrosive effect of the sulphuric acid upon the hands, clothing and rubber hose. Crude carbolic acid alone would not mix with the water, but a mixture of 5 per cent. each of crude carbolic acid and phenolene was more satisfactory. This was used till November 5th, when work was discontinued. The cost of materials for spraying sixty houses a day was \$1.10. The labor required to spray the sixty houses each day consumed four hours' time for two men and a team.

The roosting houses were cleaned once a week and the manure was placed in a part of the ranch where there would be no possibility for it to contribute to the spread of the disease.

A number of fowls among those frequenting the vicinity of the house and barns were lost from the cholera. Two turkeys also died within a few hours after they were first noticed to be sick. These birds had abundant opportunity to catch the disease from sick and dead ones brought from the infected colonies. The few fowls about the house were caught and placed with one of the infected colonies.

On October 20th, it was deemed necessary to place some disinfectant in the drinking water and thus ensure freedom from danger of communicating the disease by this means. It was decided to use corrosive sublimate in the drinking water of the infected colonies, as suggested by Ritzer. There was

some fear that it would have an undesirable effect upon the egg yield, if no worse would result. Stoneware drinking fountains were used because the corrosive sublimate would have combined chemically with the metal drinking fountains in common use. For convenience in making up the solution of the proper strength, corrosive sublimate in the form of Compressed Antiseptic Tablets, prepared by John Wyeth & Bro., were used. The tablets contain such an amount of corrosive sublimate that one tablet in a pint of water makes a 1 to 1000 solution, making the preparation of a solution of any weaker strength a simple matter.

The sublimate was used for about two weeks, and for most of the time a 1 to 2000 solution was made up. No injurious effects were noted. A decrease in the egg yield may possibly have been due to its use.

The control of the drinking water of the fowls is a comparatively simple matter in the dry season. An outbreak in wet weather would present much more serious difficulties, for every puddle of water on the ground is more than liable to be contaminated from the droppings. Under such conditions fowls would catch the disease much more readily.

No suggestions were made regarding the character of the feed to be supplied, as that matter was regarded as having no serious bearing upon the problem.

TABLE V.

Effect of preventive measures upon death rate.

Date.	Deaths from cholera, including those killed.	
Sept. 17.	Disease first appeared in one colony.	
Oct. 7.	Now involves five colonies. Total deaths to date	
	about	100
8.		48
9.	Began spraying daily and killing sick	22
10.		34
11.		26
12.		18
13.		10

	14.	Moved infected colony	10
	15.	Sanitary feeding troughs first used	10
	16.		?
	17.	Corrosive sublimate first used in drinking water	12*
	18.		10*
	19.		6*
	20.		7
	21.		2
	22.		7
	23.		4
	24.		4
	25.		3
	26.		2
	27.		2
	28.		1
	29.		4
	30.		1
	31.		3
Nov.	1.		0
	2.		0
	3.		3
	4.		0
	5.	Stopped sublimate in water. Stopped spraying	
		Total	349
		Since beginning preventive measures	201

A study of the daily death rate in its relation to sanitary measures brings out the fact of the efficiency of merely destroying the sick and disinfecting thoroughly. These measures alone were enforced until the daily death rate dropped to 10. It would be unsafe to draw conclusions concerning the actual benefit of the use of corrosive sublimate, for during its use extreme vigilance was exercised to weed out sick fowls. Moreover, its use was commenced about the time when the beneficial effect of disinfection might be expected to become evident.

* The numbers here reported refer to the fowls that died of the cholera. On the same days 55 fowls, scattered over the whole ranch, were killed by the owner because noticeably sick from some disease not determined. As rous was prevalent among fowls at the time there is good reason to believe that but a small percentage of those killed had the cholera.

The supervision of the epizootic was discontinued on November 5th, but the owner was advised to disinfect occasionally afterwards and to continue doing so actively if necessity arose. Nothing was done, however, and enquiry afterwards disclosed the fact that about 25 fowls died in December. Occasional deaths occurred until April 1st, when about 50 died during forty-eight hours. This aroused the owner from his dream of fancied security and at the time of the present writing he has determined to dispose of every fowl in the infected colonies.

Dissemination of Infection.—The spread of the disease across the country has been the subject of some speculation. The evidence indicates that the movement of fowls is one of the important causes of the introduction of the cholera into flocks where it was hitherto unknown. The ranch upon which the foregoing observations were made appears to have become infected from an adjoining ranch where the disease existed, for the trouble first appeared in a colony nearest to the second ranch and where fowls could readily intermingle. A third ranch adjacent to both of these had been stocked with fowls purchased in a locality several miles distant where cholera was known to have been seriously prevalent.

The possible importance of pigeons and wild birds as a means of spreading contagion is worthy of consideration. The fact that pigeons contract the disease has been mentioned on page 327. Other writers have shown that the disease attacks some wild birds.

The practice of throwing dead fowls by the roadside is an important means of distributing the cholera. When the disease breaks out it is a common practice of poultrymen to crate their fowls and take them to market. Not infrequently fowls die during the trip to the shipping point and are thrown out by the driver to conceal the fact. Should this be done in front of a poultry ranch it is very liable to result in the further spread of the disease, for fowls eagerly eat the dead ones. The presence of hens dead of the cholera along the roadside is a matter of common observation. Two instances of the infection of poultry

ranches, from dead fowls thrown by the roadside, have been reported in the present expizoötic. In both instances outbreaks involving serious losses have resulted. This practice is prohibited by legislation in the county in question, but it is practically impossible to secure evidence to convict the offenders.

One case of the introduction of infection through the medium of dead hens floating down the stream, has come to notice. Some dead fowls were pulled on shore by skunks, partly eaten by them and later cleaned to the bone by fowls from a nearby colony. Fifty-eight fowls died during a period of twenty-four hours. Over 100 died before the owner disposed of the remainder of the colony, after which no further trouble was experienced on the ranch.

The experience of another poultryman in the neighborhood furnished information worthy of record. After having his stock of fowls depleted by the ravages of the disease, he determined to replace the losses by purchase of healthy fowls. As the disease existed in practically every colony at the time, the problem of introducing fresh stock was a serious one. The owner decided to make the attempt in a field containing three colonies in which 870 fowls had been lost out of 1350 originally there. The survivors were removed to other colonies on the ranch. The houses of the three colonies were cleaned, whitewashed, and the floors sprinkled with phenolene. Each of the groups of houses was moved about two hundred yards from its former location, and was left untenanted for two weeks. Nine hundred and fifty fowls were then distributed among the houses, and no disease appeared among them. That this field in question was quite isolated from other infected colonies is believed to be another factor that contributed to the happy result.

Examples of severe losses from fowl cholera through ignorance of sanitary measures, lax enforcement of them or skepticism as to their value could be readily cited. An enumeration of them would accomplish no purpose, other than to emphasize the importance of a better knowledge of sanitation on the part of those engaged in the poultry industry.

This need has been recognized by the more progressive California poultrymen, who secured the passage by the last Legislature of an act establishing the California Poultry Experiment Station at Petaluma, and providing \$5000 for its use during two years. As defined by law: "The purpose of said station shall be the study of the diseases of poultry to ascertain the causes of such diseases, and to recommend treatment for the prevention and cure of the same; to ascertain the relative value of poultry foods for the production of flesh, fat, eggs and feathers; to recommend methods of sanitation, and to conduct investigations for the purpose of securing results conducive to the promotion of the poultry interests in the State. This Act shall be liberally construed to the end that the station hereby established may at all times contribute to the technical and general knowledge of the public upon the subject of poultry husbandry.

"Sec. 3. The said station shall be under the supervision of the Director of the Agricultural Experiment Stations of the State of California, who shall, from time to time cause to be issued bulletins of information regarding the care of poultry.

ACKNOWLEDGMENT.

Mr. H. O. Woodworth, foreman of the California Poultry Experiment Station of Petaluma, rendered efficient aid in carrying out the sanitary measures and in collecting data regarding disinfection.

Mr. L. B. Chandler, student, made the blood counts of fowls Nos. 11 to 15 inclusive.

REFERENCES.

1. Salmon. Annual Reports of the United States Commissioner of Agriculture, 1880-1882.
2. Moore. A study of a bacillus obtained from three outbreaks of fowl cholera. Bulletin No. 8, United States Bureau of Animal Industry.
- Moore. Infectious leukæmia in fowls. A bacterial disease frequently mistaken for fowl cholera. Annual Report of the Bureau of Animal Industry. 1895-6.
3. Friedberger and Fröhner. Veterinary Pathology, Vol. 1, p. 103.

4. Curtice. Fowl typhoid. Bulletin No. 87, Agricultural Experiment Station, Kingston, Rhode Island.
5. Higgins. Notes on an epidemic of fowl cholera and upon the comparative production of acid by allied bacteria. *Journal of Experimental Medicine*. Vol. III (1898), p. 651.
7. Moore. The Pathology of Infectious Diseases of Animals, p. 106.
6. Moore. Twelfth and Thirteenth Annual Reports, Bureau of Animal Industry, p. 198.
8. Behandlung und Verhütung der Geflügelseuchen. *Deutsche Landwirtschaftliche Presse*, XXX Jahrgang Nr. 71. S. 614.

THE veterinarian who from circumstances is prevented from attending the St. Louis meeting of the A. V. M. A., is entitled to sympathy; while he who refrains from joining his brethren in the great feast of knowledge from choice, is to be pitied.

THE railroad rates to St. Louis in August will be ridiculously low; the character of the great veterinary event scheduled for that month in that city will be exceptionally high. With two such inducements, who will remain away from the veterinary mecca of 1904?

POISONING DOGS WITH FRIED SPONGE.—Residents of Bath Beach who own valuable dogs have complained to the police that dog poisoners are at work in that suburb, and rewards have been offered for their apprehension. Tuesday Martin Julian, a brother-in-law of "Bob" Fitzsimmons, reported the death of his St. Bernard Sax, to which had been given a dose of hashed glass. Julian lives in Nineteenth Avenue, near Benson Avenue. Two dogs owned by near neighbors of his have since died. They were also St. Bernards and were owned by Mrs. M. Levy, of Nineteenth Avenue, and Dr. Philip C. Finn, a veterinary surgeon, who lives in Eighteenth Avenue. Mrs. Levy's dog died of some irritant poison. Dr. Finn performed an autopsy on the body of his dog and found that he had been given a fried sponge. A good sized sponge, fried in lard, will shrink to the size of a walnut and is easily swallowed. When the grease is dissolved by the acids of stomach the sponge resumes its normal size and lodges in the intestines, causing a painful and lingering illness, which results in death. Dr. Finn's dog suffered five days before it died. In all eight dogs have met similar deaths in Bath Beach and Bensonhurst within two weeks.—(*New York Herald*, June 23.)

HEROIC TREATMENT.

By I. A. RUBY, V. S., PLYMOUTH, OHIO.

Read before the Annual Meeting of the Ohio State Veterinary Medical Association,
Jan. 13, 1904.

By this term we mean extraordinary treatment, or any departure from that line which would, in a regular way, be prescribed. It may, in a veterinary sense, be regarded as a contempt of danger, not from ignorance or inconsideration of the gravity of the case, but from a noble devotion to the profession which we have espoused, and a just confidence of being able to meet successfully the exigencies of each special case as it may appear.

There are many conditions and circumstances which often cause ordinary means to fail; the most common of which is the late hour at which the veterinarian is called. The visit is too often unsatisfactory to both the owner and the doctor. The owner very often defers the call until nearly every chance of recovery has passed, then suddenly he is seized by a desire to have a veterinarian immediately, and he expects you to drive your horse to death and perform a miracle on his. Some years ago I inserted in my business card, "If you desire my services, call me in time; I can't raise the dead." After examining the neglected case, you may note certain conditions which tell you plainly that something more than the ordinary must be done, or perhaps they may tell you that nothing available *can* be done. The more fortunate of these cases may be saved by heroic measures.

It may not be in strict conformity with the subject, but I would like to know how to dispose of those cases which give no grounds for hope of successful treatment. It appears quite as important, in some cases, to give the owner's mind a little treatment, as it is to administer to the patient; and you may have to resort to *heroic* measures to *satisfy* him. Some men will be satisfied when you inform them that the animal will die, and bid them "good day." The next man may always

harbor the thought that something might have been done, and perhaps if medicine had been left, the echo would have been, "He ought to have seen that the animal was about to die." Study the man as well as the patient; and if you see no hope, and he cannot give up the case, tell him: "I have no hope of recovery in this case, but if you think the days of miracles are not past, here is some medicine; give a dose every hour until *you* see that all hope is gone." There are many conditions which may interfere with the action of medicine. Some of them may be accounted for, but in view of our present limited knowledge of the laws and intricate relationship existing among the different systems of the animal economy, and indeed among the various parts of the same system, we may not be able to account for the failure. Many times have you faithfully administered medicine to your patient, until you have exhausted all ordinary means, without seeing the physiological action of a single drug. As before stated, we may, or may not, be able to account for the failure. In some cases it may be the result of inability to absorb medicine, in consequence of partial or complete paralysis of the absorbing glands in the walls of the stomach and bowels. The causes which may give rise to this condition are, in many cases, so occult, so complicated, and so little understood, that they are as far beyond the comprehension of the writer as they are beyond the province of this paper.

Some cases in which there is no response to the exhibition of medicine, may be accounted for by lack of peristaltic action, in which case at least a portion of the medicine is lost in the ingesta, and either never comes in contact with the mucous membrane or does so so tardily that its united or full action is never obtained. There are conditions in which it would seem almost impossible to poison an animal unless by means of some powerful irritant or corrosive element. The text-books on materia medica and therapeutics, as well as the lectures and general instructions given in the various veterinary colleges, are as mere pointers or guide-boards, giving the general direction along which the pathway of the practitioner leads; but, like the guide-

boards on the public highway, they never conduct you along the journey, and do not always tell the truth as to distance. We may take counsel of each other occasionally, as we are doing to-day, but in the main we must travel independently. There are times when each veterinarian must become a law unto himself. If he be truly a doctor, he should be able to cut loose from all formulæ and prescribed methods, when the peculiar features or complications of the case demand it, and on his own responsibility make the treatment fit the case. There are three classes of veterinarians. The first of these includes the over-cautious, who, fearing deep water, paddle along the shore. They never venture beyond the treatment regularly mapped out, and occasionally from lack of surgical interference or heroic medicinal treatment, as the case may be, the patient is lost. The second class embraces those who lack caution and possess a surplus of boldness which merges into recklessness. They are likely to be in haste, both surgically and medicinally, in resorting to heroic measures which incur loss to the owner, and bring an unenviable reputation to the profession and to himself individually. The third class is made up of those who possess the happy combination of caution and boldness. They are the reliable men. They are the successful practitioners. To this class the veterinary profession will always be in debt. These are the men who will come to the surface in cases of emergency. When a sleeping bull-dog is lying in the path and there is plenty of room, they will cautiously pass by, but if necessary they will not hesitate to club him out of the way. In practice, when their judgment dictates it, they will not hesitate to use the knife apparently unmercifully, or to administer medicine with such profligacy that it might, by the cautious class, be called "unreasonable treatment" rather than "heroic treatment." In veterinary practice, heroic measures are not as frequently resorted to, as far as surgery is concerned, as in human practice, in which the factor of highest importance is the prolongation of life. Before resorting to any operations which properly might be called heroic, several conditions should be considered, viz. :

Is there sure loss of life on one side, and at least a chance for recovery on the other? What is the animal worth in its present condition? What will be the probable value after recovery, allowing a good discount for the chance of entire loss?

Along with some other questions which might pass through your own mind silently, or be discussed at length with the owner, are two, which your interest in the case might cause you to forget, viz.: What can I reasonably charge as a fee for this operation? And will I get the cash? Another fact to be remembered is that a good strong, lame, or blemished horse is worth much more than several dead ones, especially if you are at a remote distance from a fertilizer factory. We are justified in the heroic administration of medicine when we observe insusceptibility to its action, and the matter should not be delayed until the patient is ready to cross the "dead line."

In closing this paper, I trust you will overlook all appearances of *ego*, while I refer to a few cases in connection with my experience as a veterinarian, and I must say that I have never had occasion to regret the fact that in certain cases I have resorted to heroic treatment; for, with the exception of a few cases which were purely experimental, I have always been pleased with the results. I desire to say further that I do not wish to be considered an extremeist, but that I shall reserve the right to meet extreme cases with extreme measures, and I shall now take the risk of being, in your opinion, placed in the second class of veterinarians above named, and I shall also risk the tension placed upon your credulity as well as your patience while I report a few cases in which I used heroic treatment.

In the summer of 1893, was called to visit a colt, two months old, suffering from violent spasmodic contractions of the bowels; cause, unknown. In the face of all ordinary anodyne and anti-spasmodic agencies, the case grew worse, until in my desperation I determined to bring about some kind of a *quietus*. I began giving morphine in three-grain doses every ten minutes, and continued until fifteen grains had been given, at which time, some signs of relaxation were shown. All medicine was

now stopped, the colt became quiet; the effect of the drug passed off, the colt got up, took nourishment and remained well.

The next case I wish to report was that of a mare choked with oats. The case was of several hours' standing. The bolus was located in the middle third of the œsophagus. On account of the nervous disposition of the animal, it was impossible to use any mucilaginous or oleatic substances, and I plunged a small trocar through the integument and wall of the œsophagus, into the mass of oats, and proceeded to pump a few ounces of linseed oil through the canula. This was followed by gentle manipulation and the prompt disappearance of the choke. I have repeatedly done this in obstinate cases of cervical choke. In one very bad case of choking in the thoracic region, I gave a heroic dose of Fleming's tincture of aconite, which was closely followed by relief. Did this happen to be the case or was it due to the relaxing effect on the muscular tissues in the walls of the œsophagus?

The next case was of a cow that stripped her halter, and, after eating a large quantity of grain, passed out and finished her feast by appropriating a quantity of dead grass and frozen wheat. I found her after night, not able to arise. Not wishing to perform rumenotomy with insufficient light, a heroic dose of sulphate of magnesia, ginger, alcoholic stimulants and strychnine was given. When seen next day there was some promise of a response, and by reënforcing the treatment the cow recovered.

The next case to which I call attention was a cow, due to calve in four days, which stole a half barrel of bran. The symptoms need not be portrayed. You can see her without much stretch of your imagination. Here was a case for heroic treatment. The owner was told that the cow would be unloaded without respect to the fate of the foetus. A tremendous dose of sulphate of magnesia, gamboge, ginger, oleum lini and fluid extract of nux vomica was given, and next day there was a second deluge not recorded until this day. The contents of both abdominal and pelvic cavities were disgorged, with the

exception of the placenta, which was removed mechanically. The cow and calf both lived.

My fellow-practitioners, do not charge me with being addicted to the *habit* of using "shot gun" doses, but I wish to report one more case of heroic treatment.

Mr. Lockhart, south of Bellville, Ohio, the owner of a fine herd of dairy cows, called me to see a large fine Holstein cow. The rumen was found to be impacted, circulation very weak, great nervous prostration, and entire cessation of peristalsis. Now, for the treatment: I gave this cow at one dose, two and one-half pounds of sulphate of magnesia, one quart of linseed oil, gamboge one ounce, soluble ginger one ounce, strychnine seven grains, and left diffusible stimulants to be given every two hours. An examination next day showed slight improvement in every way, excepting that there was no evacuation of solids. I now proceeded to repeat the dose formerly given, with the addition of one gallon of molasses. This whole mass of medicine failed to purge the cow, but we got sufficient action to gradually unload the clover chaff. The cow recovered, my health is excellent, and the dairyman is still prospering.

THE feeding of the dogs at the Ladies' Kennel Association Show held at Mineola, L. I., June 22-23, was entrusted to Spratt's Patent.

It is prophesied that there will be a greater increase in membership at St. Louis than ever before. It will be only a short time when the thousand mark will be reached. It should have been there long ago.

WAR ON RANGE DISEASES.—Range reports show that sheep scab has been all but suppressed, the vigorous dipping campaign inaugurated by the Department of Animal Industry having proved effective. The pending campaign is for the eradication of mange, which even now threatens the herds of the trans-Missouri country. Veterinarians are confident that range bovine and ovine diseases can be easily suppressed; in fact, there can be no reason advanced why they should exist. The dipping vat is a panacea beyond all doubt.—(*Live-stock World*.)

SOME FACTS CONCERNING METABOLISM.

BY DR. W. A. STUHR, AMES, IOWA.

A Paper presented to the Annual Meeting of the Iowa Veterinary Medical Association,
1904.

It is with signal pride that I appear before you to-day, in this capacity. I say pride because that, and that only, must necessarily be the feeling of us all, as veterinarians, when we think of the rapid progress that our profession has made in the past few years, and, indeed, the enviable position that it is fast assuming among other professions. It is only of recent date that we have received National recognition, and now the rapid enactment of laws in the various States regulating the practice of veterinary medicine, can only serve to bring the profession into further prominence. Indeed, at the present time the veterinary profession is regarded in the light of guardian to the vast stock-raising industry of the world, as well as being almost indispensable to the health and happiness of mankind.

When, at first, I was asked by your worthy Secretary to prepare a report or paper for this meeting, I was at a loss to know what to present. Inasmuch as I have not experienced anything extraordinary in the line of cases, or anything which might prove of peculiar interest, I have decided to present some facts concerning what I believe to be, for many reasons, one of the most interesting of the vital phenomena of the animal body, hoping that in so doing we might receive some mutual benefit. The subject that I have selected for this discussion is fully as obscure as it is interesting, and the few facts that we do possess have been gleaned from a close scrutiny of causes and effects, the process itself being entirely beyond the light of our present knowledge.

Metabolism as best defined signifies the change produced in a substance by the action of living cells upon it, or the process by which living cells or organisms incorporate matters obtained from the food, into a part of their own bodies. The law of nutrition or assimilation, which perhaps is one of the most funda-

mental to characterize the organized from unorganized matter, is entirely dependent upon the process of metabolism for its identity, for it is through these changes, that unorganized matter is converted into living tissue. Thus the importance of the study of this vital phenomenon readily becomes apparent.

Metabolism in its broadest sense signifies the entire series of changes through which dead matter must pass before being converted into living tissue. It therefore includes digestion, absorption, excretion, and respiration, through which both food and oxygen are prepared for the activity of the living molecules, and the products of excretion are removed from the system. It may be said that many attempts have been made to reduce the manifestations of these interesting phenomena to the ordinary physical and chemical laws, but the success of these efforts have been only partial. It is true that with the physical laws of imbibition, osmosis, capillarity, filtration, etc., possibly assisted by chemical affinity, we are able to trace the manner in which the products of digestion find their way into the interior of the cell, and the waste products of the cell activity leave it to be excreted from the system, but the actual forces concerned in the conversion of dead material of a dissimilar character into living protoplasm identical with that which makes up the substance of the cell itself, and the breaking down of the protoplasm with the products of excretion, are as yet not capable of being explained. Thus we see that the whole cycle of changes which we designate under the term metabolism resolves itself into two distinct processes, viz.: that of construction or assimilation, which is termed anabolism, and that of destruction or dissimulation, which receives the name of katabolism. Both of these changes are of a chemical nature of a complex form, assisted probably by some force which at present may well be called a vital force. This term, perhaps, has been dropped from the vocabularies of modern thinkers, but its significance is only clothed in other words.

The primary tendency of protoplasm is katabolic, for which statement there is sufficient proof in the waste products contin-

ually being excreted from the system, such as carbon dioxide, water, urea, and other allied compounds, such as kreatin, kreatinin, etc. The relation existing between the proteid decomposition and urea has been so well established that we now consider the amount of urea excreted from the system in the urine as a direct indication of the amount of tissue change taking place in the body.

These building up and tearing down processes are necessarily very intimately associated, and constitute a series of changes which occur with almost equal regularity, so long as the tissues retain life. The amount and character of these changes may be greatly modified by external influences, and these we may manipulate in such a manner as to favor the end which we wish to accomplish. However, with the exception of these few slight temporary modifications, we may say that metabolism is entirely controlled by the law of development; that is to say, metabolism is self-limiting, or, in other words, is determined by age. In youth, or during the period of growth, the anabolic processes exceed the katabolic tendency of the protoplasm, and consequently the body grows and develops; in middle age, we reach a period at which these forces are at an equilibrium, and following this, the period of decline, where the latter force is greater than the former, which becomes less and less adequate to supply the needs of tissue repair, and consequently the end of life's cycle is reached.

Probably the direct governing influence of metabolism is to be found in the nervous system. Experiment and observation have shown that profound changes in the nature of the metabolism of a tissue may be inaugurated through interference with its trophic nerve supply. Numerous illustrations readily suggest themselves, and I may simply mention as an example the extreme rapidity with which bed sores develop, following the appearance of some spinal or cerebral lesion. Rapid atrophy out of all proportion to the lack of use following an injury to a nerve.

As before stated, there are numerous external conditions

which exert a marked influence on metabolism, either by increasing or decreasing its amount. Among these influences I may mention prominently, light, temperature, moisture, supply of oxygen, exercise, nature of the food, etc. Heredity, mental excitement, environment also exert a positive influence, but less obscure perhaps than those mentioned.

It is a notable fact that solar light exerts a profound influence over protoplasmic movement. The observations so commonly made upon plants and animals that have been kept in the dark are familiar illustrations of this fact. They become phlegmatic, their protoplasm sluggish, and in animals the excretory products are greatly decreased in amount. Experiment upon hibernating animals shows that by exposing them to the sunlight the amount of carbon dioxid excreted is increased, even after the lungs have been removed, the amount of increase in the sunlight above that excreted in darkness being represented by the ratio 100-93. The total absence of light will entirely arrest the movement of protoplasm, while its presence stimulates contraction. Thus we see that absence from direct sunlight is conducive to increase in weight by lessening the protoplasmic movements, and hence metabolism, but on the other hand, for the same reason, it markedly lowers the vitality of the individual, thus renders him more susceptible to deleterious influences, and permits disease to spread more rapidly under such conditions. The fact that darkness favors the growth of bacteria, has long been established, and, indeed, the intimate association of dark places of habitation and disease is almost proverbial.

Closely associated with light in its effect upon metabolism is the supply of oxygen. Just as it is impossible to have protoplasmic movement in utter darkness, so is it effectually stopped by the lack of oxygen. The supply of oxygen most favorable to the greatest activity of protoplasm is that of normal atmosphere. A medium richer, as well as one poorer in oxygen than the normal atmosphere under normal condition, exerts an inhibitory influence upon metabolism, the degree of inhibition de-

pending upon the extent of variation from the normal oxygen percentage of atmosphere. Thus metabolism may be controlled by a total absence of oxygen, or by a superabundance of it. That is, an atmosphere of pure oxygen is equally as obnoxious as any foreign gas, but fortunately, under natural conditions, this never prevails. It is, however, only the deficiency in oxygen which concerns us, for that possibly occurs only too frequently, and can be remedied by extremely simple measures.

The influence of temperature upon metabolism is not so prominent as at first would probably be supposed. Protoplasm has an upper and a lower limit of temperature, beyond which it ceases to contract, the degree of contraction between these points increasing directly as the temperature rises from the lowest to the highest point. Thus, by regulating the temperature, we may arrive at a point where the protoplasm is most active, or, on the other hand, where it is almost at a standstill. When, however, the external temperature falls to such a point that shivering is produced, metabolism is increased, probably through stimulation reflexly of the motor nerves supplying the muscles. A high internal temperature, such as probably occurs only under abnormal conditions, and which is designated as fever, undoubtedly greatly increases metabolism, as can be ascertained from the vast increase in the amount of carbon dioxid produced. In fact, it is contended, by some authorities, that the increased metabolism brought on by the pathological cause is the forerunner of the high temperature, rather than the result of it, and represents Nature's means of increasing the power of resistance on the part of the body.

In fever, urea is produced in amounts far in excess of that produced artificially, by raising the temperature of the body with hot baths.

On the other hand, when fever is produced experimentally by the injection of bacteria, a very decided increase in the amount of excretion occurs, even when the temperature has been controlled and prevented from rising, by the application of

cold. Thus, in some instances at least, metabolism appears to precede the high temperature. In intermittent and septic fevers the maximum amount of oxidation is reached long before the maximum temperature.

As I have said before, it is claimed that high temperature accompanying fever represents a protective mechanism; and, indeed, from a bacteriological standpoint, this seems to be plausible. For instance, the streptococcus of erysipelas does not develop at a temperature of 102° – 104° , and is killed by a temperature of 105.5° F. Clinical experience also shows that cholera patients with a high fever have greater chances of recovery than those showing no such rise in the temperature. Thus it seems that the increase in metabolism in fever may be a natural protective resource, rather than the effect of high temperature. And the high temperature thus produced, *when not excessive*, may be looked upon with favor.

Moisture bears a close relation to the amount of metabolism, not by stimulation of the process itself, but probably by supplying a condition most favorable for it. The normal amount of water in the composition of protoplasm may vary from 60–90 per cent., and above or below these amounts contraction is impossible. Within these amounts metabolism increases in amount as the percentage of water increases from the lowest to the highest. Thus a certain amount of water is absolutely essential in order that this important bodily function may be exercised. That water exerts a profound influence upon nutrition has been proven conclusively by numerous starvation experiments. In starvation, the first demands are made upon the fluid contents of the body, and this increases until the percentage of water falls below the lower limit at which protoplasmic activity is possible, and necessarily death is the result.

The intimate relation of water to metabolism is very nicely illustrated by observation upon the elimination of nitrogen in this same connection, and which, as has been before stated, is considered as an index to the amount of wear taking place upon the tissues. Data collected on this point show that from the

first to the last day of the test, there is an ever-decreasing amount of nitrogen eliminated, the interpretation of which must necessarily be that metabolism varies directly with the supply of moisture in the tissues.

On the other hand, when water is consumed in large amounts, metabolism is correspondingly increased, as determined by the amount of urea excreted. This result is not due to the flushing out of the system, for it has been shown that urea does not accumulate when water is withheld, but the increase in urea occurs by actually increasing proteid decomposition. Colin's experiments upon starving horses illustrate this point in a practical manner. He found that by supplying water to a starving horse, he was able to sustain life for a period of thirty days, and in case both food and water were withheld, death occurred much earlier. The possible explanation of these experiments is that the water was able to sustain life, not because of its own value as a food, but only by supplying the necessary moisture for the process of metabolism, thus allowing the animal greatest utilization of his own tissues. This experiment therefore suggests the extreme importance of water to the system, and especially in starvation.

In view of the fact that water stimulates metabolism, and thus favors the excretion of solids from the body, it is natural to suppose that it would bring about a decrease in the weight of the body, but practical experience has shown the opposite to be the case, and this is probably accounted for by its simple retention within the tissues.

It is a commonly known fact that the amount of food consumed is influenced by work, and that it increases in direct proportion as the amount of muscular work increases. It is also a fact that under these conditions, the body does not ordinarily increase in weight, so that the additional amount of food consumed must be utilized in the production of heat and energy, and the amount of metabolism correspondingly increased. Consequently the question naturally arises: Does the source of energy reside in an increased oxidation of proteids or the non-

proteids? To throw light upon this, numerous elaborate tests have been conducted, and many theories advanced.

Of all the explanations offered that are worthy of note, only two contend that energy is produced at the expense of increased oxidation of proteids, Liebig so contended up till the time of his death, while the preponderance of evidence remains on the other side. Indeed the first explanation hardly seems plausible, inasmuch as our beasts of burden, when performing their heaviest work, subsist almost entirely upon a non-proteid diet.

A very unique test was performed by two eminent physiologists, which explains this in a very satisfactory manner. These men undertook to climb an incline of a definite height, and each knowing his own weight was able to estimate the actual amount of work performed, allowing due consideration for the work performed by the heart and the respiratory muscles. Also, in order that no discrepancy might enter into the test, for seventeen hours previous to, and eight hours subsequent to the making of the ascent, they partook entirely of non-proteid food, that they could be reasonably sure that all the urea collected came from the utilization of the tissue proteids. The result of the experiment indicates that the real amount of energy liberated was greatly out of proportion to the proteids oxidized, and further, the amount of urea eliminated was not notably increased.

Other similar experiments upon man and dog show that not only may the energy of muscular work liberated be greatly in excess of the potential energy of the proteids oxidized, but also that the amount of metabolism of the proteids is not influenced, for the amount of urea excreted is no more than during periods of rest. This is the explanation of the working diet of the horse, which experience has taught to compose largely of non-proteid foods.

The relation of foods of various kinds to metabolism has been the subject of many lengthy discussions, and the object of extensive experiments. Indeed, volumes have been written, but in view of all this there still remain numerous factors of

uncertainty that determine this subject still in its infancy. Some facts have been ascertained, however, and it is these that I propose to offer.

First, as regards the metabolism of proteids, there are two things sufficiently definite to merit being called laws. These have been formulated in the following manner :

1. Consumption of proteids is largely determined by the supply.

2. Within normal limits, proteid consumption is nearly independent of the muscular work.

In respect to the first law, I may say that it involves the condition which we designate a nitrogenous equilibrium, and which is the normal state of a healthy body, during which, the nitrogen excreted, exactly counterbalances that amount taken in with the food. That is, in respect to the nitrogen, the body does not store up any for further use, but continually uses up its supply. That this nitrogenous equilibrium is maintained at different levels, and that the body does not ordinarily store it up for future use, can be seen from the corresponding increase in the secretion of urea with the increase of nitrogenous constituents of the food, *i. e.*, proteids directly stimulate metabolism. If the proteid in the diet is suddenly increased, very soon the body adjusts itself to the change, and a corresponding elimination occurs, and this indeed, is an indication that the body is in a perfect state of nutrition.

Inasmuch as the source of energy does not lie in the increased oxidation of proteids, and inasmuch as increased proteid consumption does not secure its retention in the system, it is probably very true, as many of our foreign investigators have said, our methods of feeding are wastefully nitrogenous. Had I the time, I could cite you to many experiments conducted by these authorities to authenticate their statements, but many interesting topics that this subject may suggest will have to be left to us individually to be looked into at more appropriate times.

As concerns the second law which infers that metabolism of proteids is nearly independent of muscular exercise, I need only

to recall the experiment cited a few minutes ago, to substantiate it.

From these facts we may conclude that the principal significance of proteids is to supply to the system that which is lost during the ordinary wear and tear of the tissues. Also, the proteids consumed in addition to the amount absolutely necessary are not retained in the system, but only serve to stimulate metabolism in a corresponding degree. There is, however, a small amount of the proteid retained in the system that does not repair tissue waste, and does not become a part of the tissues of the body. This has been called circulating proteid, and is the first to be oxidized in a state of abstinence from food. It interferes in no way with the nitrogenous equilibrium.

Relative to the non-nitrogenous foods, I may say that what has been said concerning proteids is exactly the reverse in this instance. Unlike the proteids, these foods do not enter into the structure or repair of active tissues, and indeed bear no direct functional relation to the body. On the other hand, they are simply retained in the system to be oxidized as the needs of the system demand, when their potential energy is liberated and converted into heat and muscular work.

Thus it has been primitively expressed, "The proteids build up the frame work of the great muscular machine, and keep it constantly in repair, while the fats and carbo-hydrates simply act as fuel to feed the furnace of life."

Also, unlike proteids, metabolism of fats and carbo-hydrates is anything but complicated, and apparently yields to explanation by the ordinary chemical laws. The fats after being absorbed, are deposited in the interstices of the tissues as fats, probably in a slightly altered condition, while the starches and the sugars are deposited in the liver and muscles as glycogen, with a small amount circulating in the blood as invert sugar. (Normally 0.1%, during starvation, more.) With our knowledge of the simple molecular composition of fats and glycogen, we can readily appreciate how the mere supply of oxygen will bring about a perfect oxidation of these substances, with the production of

carbon dioxid and water. In this simple complete oxidation of the fats and carbo-hydrates, we have the fruitful source of all the energy of the body.

Hence the conclusion must be that the proteids repair tissue waste and enter into the structure of the living protoplasm, while the fats and carbo-hydrates are entirely inert, and by their simple oxidation liberate their potential energy, which is converted into muscular work.

The practical applications to be made of these facts concerning metabolism are no doubt manifold, but have been considered from two viewpoints, namely, hygiene, and animal nutrition. Time will not permit of a detailed discussion of the subject from each of these phases, but in brief, I may say that from a hygienic standpoint, it should be our endeavor to increase metabolism in every justifiable manner. In the treatment of fevers we should provide plenty of pure air, water, heat, light, exercise, etc. Certainly in the handling of healthy animals, these things should receive our first consideration.

On the other hand, from the standpoint of fattening animals, all the influences which tend to hasten metabolism should be held in abeyance, thus a dark stable, poorly ventilated, and where little or no exercise is permitted is conducive to increase in weight, and in a corresponding degree noted for the tendency to rob the animal of his vitality.

Thus my friends, although I have left many things unsaid, I have outlined to you in brief manner some facts concerning metabolism, which I trust may prove of some benefit to you.

DISCUSSION.

L. V. Shipley said that a higher temperature amongst cattle was possibly the reason for their immunity to glanders.

C. Stewart cited pleurisy with a high temperature. Acetanilid and jaborandi would reduce the temperature and hasten convalescence if given early.

J. H. McNeil thought that fever was the result, not the cause. Toxines caused the different heart conditions; thought very highly of cold applications.

VETERINARIANS IN THE WEST.

BY DR. Z. VELDHUIS, KANSAS CITY, MO.

Presented to the Annual Meeting of the Michigan State Veterinary Medical Association,
February, 1904.

The West not being as thickly settled as the East, it seems evident that the veterinarian must have a larger territory for his work, charge more, or have work of a different nature in order to make a financial success. This is certainly the case in different places. The qualified veterinarians are few in the West, though it seems now the number is increasing rapidly.

The work being different, is especially noticed where infectious diseases are prevalent. Both anthrax and symptomatic anthrax are present in many of the Western States. Treatment for these diseases, if any, is prophylactic. Vaccination for both these diseases is carried on to a considerable extent. It is sometimes left in the hands of the laity; but, where a qualified veterinarian can be had, his services are preferred, at least so far as to supervise the work.

Texas fever is another disease where prevention is of interest to the veterinarian, and in this, though the Federal Government tries to control the spread of the disease, and the quarantine work is left in the hands of the Government employés, the practicing veterinarian will be called upon to inoculate cattle with blood from immune animals. This is practiced particularly in young cattle north of the quarantine line, which are to be used for breeding purposes in the Texas fever districts. Two inoculations are generally made, about five months apart, a certain time before being shipped South. The immunity is supposed to last from six months to one year, depending on the age of the animal and condition of the individual. Actinomyosis is not a very dangerous disease, and is not prevalent in Michigan, but is often brought to the veterinarian's attention and treated in the Western States.

Glanders has been very prevalent, and is still very common in the States of Missouri and Kansas. This last summer and

fall, cases were noticed most every day in this town, and I have had occasion to see a number. The mallein test is thus brought into use a good many times. Sometimes the disease is easily recognized and no test is required, at other times it is quite necessary. The salaries of the State Veterinarian of Missouri, and his deputies, and the office of the veterinarian itself, are far better than those of Michigan. Glanders comes under the notice of the general practitioner as well.

Aside from contagious diseases, we have in some States (Montana and others) poisoning from certain plants, as the loco weed, lupine, and others. Then on the ranges the spaying of heifers is practiced, and is sometimes done by the laity or experts in that line, but in some places affords employment for the veterinarian.

The laws governing the practice of veterinary medicine and surgery in the West are about the same as they have been in Michigan for years. That is, they are being formulated and put in the hands of the legislators, and at some future time there may be some laws.

Veterinary schools further West than Chicago are not numerous. Iowa has one; there are three in Kansas City; one in San Francisco, and one in Pullman, Washington—all three-year schools but one. The Kansas City Veterinary College is a well-established three-year school. The Kansas City University Veterinary College is a school still in its infancy, though claimed to be a three-year school. The Western Veterinary College is a two-year school, something like the Grand Rapids School. The Kansas City Veterinary College, where the writer is attending, has a fine new building which is a credit to the veterinary profession, and would make many a veterinarian wish to graduate again, if they could see this fine structure with its equipments. Those who get the *AMERICAN VETERINARY REVIEW* will have noticed a description and illustration of the building in the August number. The number of students now enrolled is 192, of which 38 are seniors, and four post graduates.

Veterinarians acting as meat inspectors or employés of

the Bureau of Animal Industry are stationed all over the United States, but especially in the Western States on the quarantine work, for such diseases as sheep scab, Texas fever, *maladie du coit*, anthrax, glanders and others. Then in the stock yards as ante-mortem inspectors, and in slaughter-houses as post-mortem inspectors. There are in Kansas City some sixty or more doing this work, about 25 or 30 doing ante-mortem inspection, of which only two or three are veterinarians; the rest are stock examiners. Of the thirty, or about that number, doing post-mortem work, five or six are stock examiners or taggers, and five are temporary inspectors. Those temporary inspectors and stock examiners are given this work because there is more demand for inspectors than there are eligibles for the position. Even now they are short of inspectors here, as the examination in October did not leave enough eligibles to fill the places.

The diseases noticed on post-mortem inspection for which carcasses are condemned are quite numerous. Some of you who get the reports of the Bureau of Animal Industry will know. Those most often found in cattle are actinomycosis and tuberculosis. In hogs, cholera, swine plague and tuberculosis. Septicæmia and pyæmia are found in the different animals. There are probably more sheep condemned for emaciation, and those that are dead or nearly dead before they reach the shambles, than are condemned for disease. The cause of being anæmic or emaciated is often due to some parasite, quite often to the *asophagostoma columbianum*, causing nodular disease, which can be detected by the presence of the nodules in the intestines.

Various pathological conditions are met with in the different animals, some of which warrant the condemning of the carcass and some do not. Those cattle which are inspected ante-mortem and rejected are marked with paint and a metal tag numbered and put in one ear. Most of these are, as a rule, slaughtered at the abattoirs. The inspector at the abattoir receives a letter, which gives a description of the animals rejected in the yards, tells the number of the tag, and the letter is returned to

the inspector at the yards with the report of the post-mortem findings. The animal may be condemned or passed, as the case may be. Cases of actinomycosis are generally local and are passed unless badly emaciated. When it is generalized, probably one case in fifty, the whole carcass is condemned. In actinomycosis the head is usually condemned if disease is localized.

The two cities, Chicago and Kansas City, have the largest stock markets, and the largest or most packing houses, in the United States, and it is there the most Government men are employed.

It seems at the present time that there is a better field for the veterinarian than eight or ten years ago. The State of Montana has a few county meat and milk inspectors appointed by the State.

The position of army veterinarian is more inviting than formerly. All along the line we notice the profession is coming to the front in East and West.

READ the preliminary programme of the St. Louis meeting of the A. V. M. A., on page 400, and then prepare to participate in the stirring event, Aug. 16-19.

APROPOS of the discussion in the REVIEW a year ago as to the rarity of white foals, the *Breeder's Gazette* of recent date published a half-tone illustration of a brood mare and her *pure white foal* at her side.

HYDROPHOBIA.—Thorpe (London *Lancet*, May 14) states that the powdered seeds of a species of strychnos, probably *strychnos nux vomica*, have for several hundred years been used in China as a remedy for hydrophobia—probably on the principle of *similia similibus curantur*. The dose, expressed in terms of the alkaloid, would be from $\frac{1}{15}$ to $\frac{1}{33}$ grain.

ESSAYISTS from Germany, France, Canada, the Philippines; from the extreme West, the extreme East, the extreme South, the extreme North, with a generous sprinkling from all parts of the centre, will be the literary offering at St. Louis in August. These may be read in the printed "Proceedings" next winter; but the discussion of the papers loses half of its merit when taken from the speakers' mouths and placed in cold type.

TUBERCULOSIS IN DUCKS.

BY WALTER E. KING, A. B., OF THE DEPARTMENT OF BACTERIOLOGY AND PATHOLOGY, NEW YORK STATE VETERINARY COLLEGE.

The study of avian tuberculosis has disclosed the fact that this disease is not at all uncommon in the domestic fowl, and cases are recorded of tuberculosis in many species of birds. Among the common farm-yard birds, chickens seem to be the more frequently affected; however, tuberculosis is not rarely found in some other species, such as the guinea fowl, pea fowl and pigeon. Weber* states that this disease is found most commonly in the common fowl, pea fowl, guinea fowl, grouse, pigeon and partridge. Tuberculous lesions have been found in the parrot, swan and in many wild birds. Sibley † in 1890 describes a case of tuberculosis in a swan which he post-mortemed. He states that from his observations, the greater percentage of cases do not occur in graminivorous than in carnivorous species, but that such might be believed to be true because the opportunities for examining cases among the graminivora are greater.

Weber, in 1892, says that Dr. Edwards Crisp was the first to observe that grain-eating birds were alone affected in farm-yards. From the work of Dr. Crisp it was evident to Weber that tuberculosis affected only grain-eating, fruit-eating and vegetable-feeding birds.

Mention has been made of Weber's observations in regard to the relatively frequency of tuberculosis in different species of poultry. Cadot ‡ from his observations, gives in the main, the same list of species, placing the chicken first, then the pheasant,

* Weber, S. E. Review of the Avian Tuberculosis, *Jour. of Comp. Med. and Vet. Arch.*, Vol. XIII (1892), p. 429.

† Sibley, W. K. Tuberculosis in Birds. *Jour. of Comp. Med. and Vet. Arch.*, Vol. XI (1890), p. 317.

‡ Cadot et Roger. A Contribution to the Study of Avian Tuberculosis. *Studies in Clinical Veterinary Medicine and Surgery* (1900). (Translated by Dollar.)

guinea fowl, turkey, pea fowl and pigeon. He also makes mention of the parrot and swan.

In regard to the relative frequency of tuberculosis in chickens and ducks, Cadiot* in 1895 makes the statement that in poultry yards where chickens are decimated, ducks very generally resist entirely, or only a very few succumb to the disease. He followed for four years an epizootic of avian tuberculosis in Paris which killed 60 fowls and not a single duck, the ducks living under exactly the same conditions of environment as the chickens. His list of observations up to that time give more than 200 cases in chickens and only two cases in ducks. His conclusion is that all species in a poultry-yard are probably subject to infection with tuberculosis, but while common in some species, in others it is rare.

In discussing the above article of Cadiot's, M. O. Lancher cites a case of a duck which he post-mortemed in which he found tuberculous lesions.

On Jan. 11, 1904, a duck which had died during the previous night, was sent from a neighboring farm for post-mortem examination. No history of the case was obtained, the duck being apparently well the previous day. On post-mortem the following lesions were found: The liver was somewhat decolorized, sections of which showed fatty degeneration and congestion. On the gizzard there were a few hard whitish nodules and a black necrotic mass 1 cm. in diameter firmly adherent to it. The other organs were normal in appearance. Cover-glass preparations were made from the nodules on the gizzard and stained with carbol fuchsin for the tubercle bacterium, which on examination revealed a considerable number of organisms which took the tubercle stain. A guinea-pig was inoculated subcutaneously with a piece of the necrotic tissue. The animal died 39 days later, but no lesions were found.

Morphologically, the organisms in the preparations made from the duck resemble quite closely those in preparations

*Cadiot. Sur la tuberculose du cygne. Bul. de la Soc. Cen. et Med. Vet., Vol. XLIX (1895), p. 570.

made from the tissue of chickens affected with tuberculosis. The organisms obtained from the tissue of the duck varied in length from 1.5 μ to 2.9 μ , the average being 1.9 μ in length and about .3 μ in breadth. A considerable number of slightly curved forms were observed. In general they took the stain uniformly, only a very few beaded forms being found.

"BUSINESS is rushing here, in spite of a larger influx of automobiles."—(*G. R. Young, D. V. S., Omaha, Neb.*)

PREVENTION OF MILK FEVER.—Mr. John Gilbert, of Tolworth Court Farm, Surbiton, in a letter to the London, England, *Live-stock Journal*, of May 27, 1904, writes: "I will introduce my plan of prevention by stating that I have milked about eighty cows, and calved quite one hundred a year (as I buy incalvers), and for the last twelve years without one single sign of a case of milk fever, though previously I had lost many. I may say that I had the tip quite by accident, from, in my opinion, without doubt the very best dairy farmer in England. The plan is too simple for many to believe in its effectiveness, but I am open to wager anyone the odds of two to one annually that I do not have a single case. The plan is as follows: 'Every cow coming with her third calf or over shall be liberally fed on usual keep, according to time of year; in winter she shall be kept in a box (loose) when expected to calve. She shall have one or two pints best linseed oil a day or so before calving, and again twelve hours after calving; bran mash an hour or so after calving, and bran mash, with chaff and hay, for two days. The cow and calf lie loose, but the cow shall not be milked for at least forty-eight hours after calving. In the case of a dead or weakly calf, about a quart may be milked four times in twenty-four hours. And this is the whole secret. To many it may seem unnatural, but a heavy-milking cow is an unnatural animal. And is it natural to take from a cow just calved what the calf would not take until a month old? The strain on the system in replenishing the milk supply is, I think, the sole cause of milk fever—together with the neglected state of the bowels. If anyone will read this plan through very carefully, and then make up his mind to try it faithfully in every case, and immediately discharge even the best man in his employ who disobeys his instructions in the slightest degree, I honestly believe the odds of my wager given above may be doubled with safety.'"

MALIGNANT ŒDEMA.

BY DR. V. SCHAEFER, TEKAMAH, NEBR.

Read before the Nebraska Veterinary Medical Association.

Malignant œdema is of great importance to the veterinarian and stock-owner, as it resembles to some extent anthrax. The disease is not so very common, but, when it does appear, it nearly always proves fatal, and may affect a number of animals in the same herd at the same time. The disease is caused by inoculation into the subcutaneous connective tissue the œdema bacilli (Koch), *Vibrio septicus* (Pasteur). The bacilli are said to exist in large numbers in the superficial layers of the soil.

As before stated, the disease nearly always proves fatal, and quite often in a very short time after being noticed, a number of cases within forty-eight hours, although some may linger for two or three weeks, this certainly depends to a great extent on the virulency of the disease germs.

Now, as this paper is intended more as a report of cases which came under my observation than it is to give anything new on this disease, I will describe a number of cases which I had to deal with in the past few years, both the symptoms during life and some of the post-mortem lesions as noticed by me. I will state here that in my first experience I did not recognize the disease, as I had never heard of it, and in consulting my text-books at that time none made mention of any such disease as I had to deal with. In 1895 I was called to a farm near Herman, Nebr., to investigate a peculiar disease, of which three or four horses and one cow had died and four more horses were sick. These animals were all running in a pasture located in the Missouri bottom. The first I noticed were the sick horses; they would eat and drink at that time, but had large œdematous swelling at the anterior part of the thorax, extending from one point of the shoulder to the other and extending back almost as far as the ensiform cartilage, and up the neck about two thirds the way to the angle of the lower jaw, and in the centre the swellings were from four to six inches in thickness and very

sensitive to the touch. Not knowing what the disease was I made post-mortem examination on two of the horses which had died. On making one incision through the swelling it had a watery yellow appearance; the water seemed to run from it as from a sponge, and on opening the body of the animal, I found all of the connective tissue yellow, extending as far back as the lumbar region; in fact it had the appearance as if everything in the animal had turned yellow. I pronounced it a case of septicæmia due to inoculation of some septic material from the barb wire fence, as the swellings were in a very favorable location to have been produced in that way.

I treated these horses with stimulants, iron and quinine, but they all died in the course of two days. My next case was similar to the first case in appearance, only the animal lived for some time. In this case the swellings became gangrenous, with sloughing of a great portion of the connective tissue of the neck, including the œsophagus from its entrance at the chest up to the pharynx, so when the animal would attempt to eat the food would fall out at the openings caused by the sloughing. On post-mortem the œdematous swellings had lost the greatest part of the yellow appearance as seen in the other cases, they had become reddish brown and gangrenous. The internal organs, lungs, heart, spleen and liver, were of a reddish appearance, the spleen was thicker than normal and the liver was very much swollen; as I stated before, not knowing the nature of the disease, I sent several specimens to Dr. A. T. Peters for microscopical examination, with the results reported to me in a few days by Dr. Peters, malignant œdema. My next case was at Craig, Nebr., where one of the town milch cows was affected with a large œdematous swelling between the fore legs, involving the brisket and lower part of the neck. I treated this cow with injections of Lugol's solution deep into the tumor; after this the cow seemed to improve for a few days, then I made another injection of the same solution, but the cow died in the course of about ten days. My next case was in the spring of 1902, on a farm about four miles south of Oakland, Nebr. In this case the

swelling was similar to those cases already described, with the exception the swelling was so large as to spread the legs away from the animal's body and give it a bench-legged appearance and stand in a propping position; the swelling extended nearly as high up as the top of the shoulders and up the neck nearly to the larynx and was eight or ten inches deep at the sternum. I treated this cow with injection of tr. of iodine deep into the tumor and deep incisions, but this cow died in about three weeks. My next cases were on this same farm, Oct. 19th, 1903, when the owner came to see me. The man said that he had some cattle affected the same as the cow before mentioned, only that there were a good many and they were all in the feed yard and quite fat, almost fat enough to ship to market. I called at the farm that evening and in looking over the cattle we found twenty-three animals, all steers but one and nearly all of Hereford breed; the only cow which was diseased and drew the attention of the owner, was swelled nearly as bad as the one they lost in the spring of 1902. The swelling of the steers was not quite as bad as that of the cow and varied in size, from the size of a large water pail down to the size of a child's head. I now at once realized from my previous experience that I had a difficult case on hand, and of considerable value. After considering treatment I concluded to try potassium iodide in half ounce doses internally, three times a day, and externally I had them apply once a day a solution of one and one-half per cent. of bi-chloride of mercury. On my return three days later I found that it was impossible to give the medicine three times a day, therefore ordered three doses given at one time—that is to say, one and one-half ounces of the potassium iodide once a day to each animal. This was on Thursday, and on the following Monday all the animals showed marked improvement but nine, and they also showed well-marked symptoms of iodism. I reduced the dose to one ounce on all that showed improvement and continued the large dose on the others until marked improvement set in. I want to say here that I stopped the external application of the bi-chloride solution after it had been ap-

plied three days, soreness setting in. I then instructed them to stop applying same for two or three days until the soreness subsided and then apply again as before. I will state, under this treatment all the animals made a complete recovery and have since been sent to market, with the exception of one, in which mechanical pneumonia was produced by drenching. My next case was that of a horse on a farm, near Pender, Nebr. On the first day of November, 1903, the swelling had been noticed for about one week. In this case we had the large œdematous swelling at the breast and inferior part of the neck; also the legs were all swollen. The fore and hind legs were so large that the animal had a very clumsy appearance while walking. This horse was treated similar to the cattle, and recovery followed.

ERRATUM.—JUNE REVIEW, article on "The Blomo Patented Horse Food," page 298, line 22, for "annihilated," read "assimilated."

SEEKING VETERINARY LEGISLATION IN LOUISIANA.—Under date of June 12, Dr. W. H. Dalrymple writes the REVIEW as follows: "I have been trying to get some livestock sanitary legislation through at the present session of our General Assembly. The bill in its original shape did not seem to suit some of our short-sighted, uninformed statesmen (?), and was recommitted to the calendar. The chief objection was to the creation of a new office (that of State Veterinarian), so I have had to get up a substitute eliminating that feature, and making it the duty of the Commissioner of Agriculture to employ the services of a competent and duly qualified veterinarian when in his judgment such is necessary. I enclose you a copy of our original bill, which I think is quite a big step for us in Louisiana, considering the amount of ignorance which prevails among our law-makers, and others, concerning the importance of such matters to the State. The substitute, if it passes, will be similar to the enclosed, except that the State veterinarian feature has had to be eliminated. I also send you the copy of a few points I got strung together to try to impress our legislators with the necessity for such legislation. So you see, although we are away down here on the 'outskirts' of the country, we are still endeavoring to keep up the fight for the profession and progress."

REPORTS OF CASES.

"Careful observation makes a skillful practitioner, but his skill dies with him. By recording his observations, he adds to the knowledge of his profession, and assists by his facts in building up the solid edifice of pathological science."

OXYGEN IN THE TREATMENT OF PARTURIENT PARESIS.*

By JOSHUA MILLER, V. S., Iowa.

The use of air, or pure oxygen, as a specific agent in the treatment of parturient paresis, came to my notice during the early part of last summer.

Drs. Tennant and Barnes, of London, Ontario, gave a brief review in the *Farmer's Advocate* of the use of air and pure oxygen by some veterinarians in Europe, in the treatment of this fatal malady, and at the same time stated the results of its application in eight or nine cases in their own practice. Later these gentlemen reported having used oxygen alone in forty-eight cases, with forty-seven complete recoveries.

We are greatly indebted to Dr. Schmidt for his discovery of the point of infection and for his treatment, which so far exceeded any treatment or remedy known up to that time. But in veterinary medicine, as in the other sciences, the triumphs of one year are surpassed by those of the next. The beneficial results of this new treatment are so rapid, so complete, and so uniform, that it is really remarkable, and no veterinarian need hesitate in adopting it.

Almost immediately after hearing of this new treatment I suggested its use to a local practitioner, and it is due to his kindness that I have to present to you a report of five cases. Knowing that you are all well acquainted with this disease, I shall only give a brief account of the symptoms.

Case No. 1.—A large high-grade Shorthorn, and fat as a corn-fed beef animal, had been sick about fourteen hours, and at 7 P. M. was found lying on her side, badly bloated and in a complete comatose condition. So near was this animal's life at the terminal point, that treatment would not have been attempted had it not been for faith in the new remedy and the anxiety to test it. The udder was cleansed and disinfected and the gas conveyed into it from the tank by a piece of rubber tubing, about seven feet long, and a teat tube, until each quarter was partially distended. The teats were taped to prevent the escape of gas and the patient put in a comfortable position. One hour

* Presented to the Annual Meeting of the Iowa State Veterinary Medical Association, 1904.

later there was some perceptible improvement, evidenced by eructation of gases, and diminished tympanitis and partial return of consciousness. But this improvement did not continue, and a stimulant and febrifuge was given by the mouth, and one grain of strychnine hypodermically. The bladder was emptied and an enema of warm water used. During the absence of the attendants about one hour for supper, the calf got hungry and in its attempts to satisfy its appetite, removed two of the tapes and drew off some of the oxygen. This was noticed on their return and these quarters were again filled and the stimulants repeated. No coughing was noticed after drenching, but her respirations became increased and did not subside for an hour or two. Whether this was due to the medicine entering the lungs, or repeating the use of the gas too quickly, I do not know. Patient was very quiet and seemed very weak during the early part of the night and up to 1 A. M. She was not seen again until 6 A. M., and no change was noted, except a decline of the vital powers. The tapes were removed, the udder again inflated and the stimulants again repeated. Kidneys acted freely, and the bowels moved considerably after the use of an enema. Patient was seen no more, on account of the distance, but owner reported she grew weaker and weaker and died at 6 P. M. on the second day of her illness.

Case No. 2.—A fine specimen of the Jersey breed was found in the first stage of the disease in the early morning and grew rapidly worse until 9.30 A. M., when she went down. At this time each quarter was filled with the gas and the teats taped. No other treatment was given. A shade was built over her and the flies kept off. No change was noticed until 3 P. M., when she suddenly rose to her feet and walked off, increasing in strength as she proceeded. At 7 P. M. she appeared all right excepting some constipation, a slight congestion of udder, which passed off in a day or two.

Case No. 3.—Large Durham cow manifested some illness in the evening and was found down and unable to get up next morning. The udder was filled with the oxygen gas at 10 A. M., bladder was emptied and enema given. At 6 P. M. no change, and the gland was again inflated. She did not succeed in getting up altogether, although she made frequent attempts, until midnight. The disease gradually vanished in the next few hours.

Case No. 4.—Jersey cow, twelve years old, was noticed sick in early part of day. First treatment given at noon. At 7 P. M. patient was able to stand, but was unsteady on her feet, and an-

other treatment was given. Next morning she was well.

Case No. 5.—A fine Holstein and a great dairy cow was found down and unable to rise, though she had been sick only a few hours with all the typical symptoms of the disease manifest. This case does not differ from the rest except in its rapid development and persistence. First treatment was administered at 10 A. M., the second at 6 P. M., the third the following morning at 6.30 A. M., the fourth at noon between 12 and 1 P. M. and the fifth at 6 P. M. Three hours later she got up and all the normal functions came quickly into action, including the bowels, which had not moved since or during the two days of her illness. At the time of the fourth treatment the cow was given one dose of aromatic spirits of ammonia and fl. ext. nuxvomica. As she seemed worse and as there were well-marked indications of collapse, the bladder was emptied twice a day, and as there was considerable prolapsus of the rectum there were enemas and bathing used and proper protection and support applied. A purgative was given at the last time of the treatment of the udder, the semi-comatose condition having almost completely passed away.

In reviewing this disease it is evident it is caused by the presence of an anærobic microörganism and its toxic products, producing first paralysis of the motor nerves and later the whole nervous system.

Past experience has proven that internal administration of drugs is of little use in any case and in many cases positively detrimental. Drs. Tennant and Barnes have concluded from their experience that the pure oxygen gas is all sufficient and all other medication is unnecessary. I do not mean to state that good nursing can be dispensed with and the general comfort of the animal neglected. As the cost of the treatment is a point to consider, I will state that pure oxygen gas can be obtained at almost every wholesale drug house or from the Chicago Oxygen Gas Co. at a cost of six dollars per tank, which contains sufficient gas to treat about one dozen cases, making an average cost of fifty cents per each patient.

DISCUSSION.—This paper was discussed quite freely by C. J. Hinkley, H. E. Talbot, and Hal C. Simpson. All reported very favorably on the use of air alone.

ST. LOUIS is neutral ground; let the East vie with the West in outnumbering each other, while the North and the South may contest the same question.

HYPERTROPHY OF THE SPLEEN, WITH AMYLOID AND HYPERTROPHIED LIVER.*

By GEORGE N. WALROD, V. S., Iowa.

On October 4th last I was called to see the bay driving mare belonging to Judge Bailie. The Judge not being at home, Mrs. Bailie informed me that the mare had not been looking well for two weeks, but had eaten her feed until that day, and when I saw her it was about 9 o'clock in the evening. She had been lying down and showed signs of mild colic, but her temperature was $106\frac{1}{2}$, pulse 60, bowels tardy in action. Mrs. Bailie wanted me to take her to my infirmary, which is about two blocks away, which I did. Upon arrival at the infirmary I gave her a large dose of aloes and raw linseed oil, which acted well. As yet I had not made up my mind as to what was the matter, but I thought she needed a purge (I may say that she had been falling off in flesh rapidly for two or three weeks).

But after the purge her temperature was up to 104 to 105, with pulse ranging from 45 to 60, but she would eat her feed without medicine, so for two weeks I drenched her with a drachm each of potassium iodide, potassium nitrate, ferri sulphate and nux vomica, three times a day.

She seemed to feel some better, had more life and eat better, but still had high temperature and abnormal pulse; did not look very sick, but was getting thinner. About that time the Judge came home and wanted to know what I thought was the matter with the mare anyway, and I told him I thought she had enlargement of the spleen and perhaps the liver, and I thought a little grass would be good for her. I put her in a blue-grass pasture close to town, where she had good feed and a little oats twice a day for three and a half weeks. She seemed to like the grass, but she did not gain any; on the contrary, she got thinner. Then, on November 11th, I brought her to town and put her in the owner's barn, with no improvement save in appetite; she would eat a good fair feed three times a day, and still grew poorer. I saw the Judge again, and he wanted to know what I thought of the mare. I told him I thought she had a large spleen and a bad liver, and that I had done all I could for her, and that I thought she would die. I did not see him again until December 3d, when Mrs. Bailie sent for me again and wanted me to do something with the mare; she said she was down.

* Presented at the Annual Meeting of the Iowa State Veterinary Medical Association, 1904.

I went and found her down, with her head in the corner, in a position where she could not get up; she was perspiring and trembling. I moved her around in a better position, but she would not try to get up; this was in the morning about 9 o'clock.

I told Mrs. Bailie that I would try and sling her in the afternoon. Mrs. Bailie informed me that she had been eating well every day since I brought her home, and that she was still growing poorer.

I went home and at noon Mrs. Bailie telephoned me that the mare was dead.

I held a post-mortem examination, which revealed an enormously large solid spleen, weighing 44 lbs., and a starchy, firm liver, weighing 35 lbs.

All other organs were normal as far as I could ascertain, considering the conditions above mentioned.

[NOTE.—In the discussion Dr. J. H. McNeil reported a somewhat similar case as found at the Ames clinic.]

EXPERIENCE WITH ASCARIS MEGALOCEPHALA.

By Z. W. SEIBERT, V. S., Crestline, Ohio.

I was called to Mr. E. C. Gledhill's early Sunday morning, April 3, 1904, to see a sick colt. I arrived at the place in about one hour, and found a colt, four months old. The owner said the colt was all right the evening before, and ate his supper with greed. On going to feed in the morning he found the colt down and could not get up. The colt had the following symptoms: Down; extremities all deathly cold; circulation imperceptible; temperature 97°; dry, unthrifty coat; pot-bellied; respirations labored and frequent, distended abdomen, with some gases, and convulsions had taken place. The convulsions were tetanic in character. I told the owner that the colt was dying, and diagnosed the case as rupture of bowel caused by some obstruction, and that treatment would be unavailing. The colt died in half an hour.

Post-mortem showed that there was a rupture in the pelvic flexure of the large colon. When I opened the abdomen the fecal matter was found outside the bowels in the abdominal cavity, and some few *Ascaris megaloccephala* were also found. This made me look further for the worms, so I examined the intestines all through; and, to my surprise, when I came to the small intestines I found them almost completely blocked with these worms, finding 580 of them, averaging 7½ in. long.

The peculiar part of this case is that the colt was always in good flesh and spirits, and I know it had the best of upland feed and water out of a pure running spring, and never ailed a minute until found down sick, and died in a few hours.

COMPLETE RADIAL PARALYSIS.

By T. F. MOYLE, V. S., Waterford, Wis.

This is a case of what Prof. Möller calls "complete radial paralysis," but, if my memory serves me right, Prof. McKillip calls it "brachial paralysis"; and, from the description given by the learned professors, I am inclined to Prof. McKillip's diagnosis. This makes the fourth one in the equine and one bovine that I have attended, and none recovered, nor could they bear one pound of weight upon the limb. I have not had the opportunity to hold a post-mortem on any as yet, but I may on this subject, for I expect a lawsuit out of this case. It is a three-year-old colt, which was scared by a dog while hitched to a cart. It got away from the driver and ran against a tree, striking against the shoulder. When rising it could not bear



any weight on the limb, but could advance the foot, as shown in the photo, without any apparent difficulty or signs of pain. No swelling nor soreness have appeared in the limb.

In Dr. Wyman's work on lameness, under cut of radial paraly-

sis, he says the elbow ought to be further down. In this case it is plain, for the elbow is six inches lower than the normal elbow can be brought. In both Möller's and Wyman's works their description of radial paralysis, some support can be borne by the limb; also the prognosis is favorable. In Prof. McKillip's description of brachial paralysis no support can be borne by the limb, and the end is invariably fatal. This tallies with my five cases. The four equine cases that I attended were colts from one to three years. The cow was in years, did not shrink in her milk, but had to be fed, as she could not get around in the pasture.

FISTULOUS WITHERS.

By SAMUEL GLASSON, JR., D. V. S., Veterinarian 9th U. S. Cavalry, Wawona, California.

After having undergone an operation for chronic appendicitis at the U. S. A. General Hospital at the Presidio of San Francisco, Cal., I was ordered to report for duty at Ord Barracks, Monterey, Cal. Shortly after my arrival at Ord Barracks, my attention was called to a case of fistulous withers in Troop D.

This case had been attended by a civilian veterinarian for at least a month prior to my arrival, and I decided to operate. I found some fibrous tissue and a couple of tracts, which I extirpated. One tract seemed to penetrate beneath the right scapula, and as I did not have a trephine at hand, I had the animal released.

After a couple of weeks of unsatisfactory treatment I again chloroformed the case, trephined the antea-spinatus fossa of scapula about two inches below the cartilage of prolongment, obtained good drainage, and the animal is now apparently as well as ever, having made the trip from Ord Barracks to Yosemite National Park, a distance of about 250 miles without incident.

RUPTURE OF ANTERIOR EXTENSOR OF PHALANGES.

By SAMUEL GLASSON, JR., D. V. S., Veterinarian 9th U. S. Cavalry, Wawona, California.

About a week after my arrival at Ord Barracks, I was called to treat a mare mule belonging to the Quartermaster's Department. This animal had been grazing, and, as near as I could learn, had stepped into a gopher hole, fallen and struggled with the foot fast in the hole.

The animal when seen by me, knuckled over at almost every step, also while standing, with the off hind foot, so that the anterior wall of the hoof rested upon the ground.

On close examination I could get no crepitus and diagnosed the case as rupture of the anterior extensor of the phalanges.

I had her placed in slings and a spring-steel splint welded to the toe of a shoe and the shoe nailed to the foot. I had the splint at an angle of about 70° from the shoe, the upper part of the splint being bound to the metatarsal region, thus keeping the toe extended.

The next morning I found the steel splint broken, so substituted one of iron.

After keeping the mule in slings and splint for six weeks, I discharged her as cured.

EVERY true veterinarian is necessarily interested in the steady upward progress of his profession. Veterinary schools are the chief spokes in the wheel of educational advancement. These factors will form a large section of the programme at St. Louis, Aug. 16 to 19. It is your duty to be present and assist in the solution of these problems.

DR. DALRYMPLE'S GREAT SERVICE TO FARMERS APPRECIATED.—Dr. Dalrymple, of the Louisiana Experiment Station, has done the farmers of the United States good service by his recent investigation to devise a remedy for the intestinal diseases of sheep. These complaints, if they may be spoken of in the plural number, have all but driven the farmer living in low altitude lands east of the Missouri river out of sheep growing, the whole country having been more or less infected. Thoroughly discouraged by unsuccessful efforts to breed lambs, the corn-belt farmer has virtually concluded that his sphere as a mutton-maker is limited to the finishing of range-bred woolskins. Dr. Dalrymple has demonstrated that the disease may be eradicated by marketing infected stock and cleansing pastures by cultivation. The correctness of his theory is proved by recent success at sheep growing in central Illinois, where a decade ago intestinal diseases forced growers to get rid of their breeding sheep. Lately they have resumed and have had no trouble. Sheep breeding will yet be profitably conducted all over the low altitude section of the United States, and this will be accomplished by working on lines suggested by the Louisiana investigator.—(*Live Stock World*.)

EXTRACTS FROM EXCHANGES.

ENGLISH REVIEW.

By Prof. A. LIAUTARD, M. D., V. M.

A CASE OF FRACTURE OF THE PYRAMIDAL EMINENCE OF THE OS PEDIS (BUTTRESS FOOT) [*A. R. Routledge, M. R. C. V. S.*].—This mare, aged nine, was doing the work of a stage horse. She became lame upon the right fore leg, and, notwithstanding treatment, she grew worse. The foot was long and narrow, the fetlock slightly deviated outwards, but these conditions were not sufficient to establish a diagnosis. Median neurotomy was performed, and her lameness improved by half from what it was. A month later ulnar neurotomy was resorted to with perfect success; the animal was able to resume work after three weeks. From that day (say the end of June) to the following February she worked. During that month the coronet became the seat of a swelling, which covered the front of that region and extended outwards, soon becoming a true bony deposit. Then the whole leg began to swell, the swelling extending upwards to the point where median neurotomy had been performed. It kept increasing, the lameness returned, and in walking the animal's foot came down first on the ground with a tendency for the toe to turn upwards, as in breaking down of the perforans tendon. The mare was killed. At the autopsy were found: a softening of that tendon, a slight lesion of navicular disease, degeneration of the corono-pedal articular cartilage, and an old fracture of the pyramidal eminence, with a false union to the body of the bone. There also was a recent fracture of a portion of the third phalanx, at the point of articulation with the os navicularis, which, with the lesions of the perforans, probably accounted for the final breaking down. By the neurectomies performed, one year's work was obtained from an animal which would have remained otherwise a hopeless case.—(*Journ. of Compar. Path. and Therap.*, Dec., 1903.)

AN OUTBREAK OF VENEREAL DISEASE IN SHEEP [*W. H. Flook, M. R. C. V. S.*].—Aug. 15, fifty-two yearling ewes and two young rams were bought and brought to a farm. Shortly after their arrival, it was noticed that one of the rams had a discharge from the sheath, while on the other were observed around the mouth and nose an eruption rather extensive. Although it was not known if the ewes had been covered before being pur-

chased, they were separated from the rams; these two were placed with a small flock of older ewes. After a few days it was observed that a certain number of these were affected with a disease of the vulva. The rams were then isolated; they had remained about a week with the old ewes. The only symptoms observed were: a large swollen condition of the vulva and raw, bleeding sores on the cutaneous and the mucous surfaces of the labia. The temperature was normal and general condition good. Inside the sheath of the ram there were small raw, ulcerating sores. The sick animals were isolated from the others, and the sores dressed with antiseptic lotions and iodoform. "As the rams were marked with color on the breast and between the fore legs, it was easy to find which ewes had been covered; yet one or two were diseased, and had not been covered. The tail of the ewes were docked very close and left insufficient to cover the vulva. Perhaps the infection was carried by flies or perhaps also by the rubbing of the ulcerated nose of the ram thus affected."—(*Journ. of Comp. Path. and Therap.*, Dec., 1903.)

A CONTAGIOUS DISEASE OF THE GENERATIVE ORGANS IN SHEEP [*Prof. J. McFadyean*].—Having visited the animals whose case is reported by M. Flook, the Professor published notes which he had made on a similar trouble in 1896. The disease was observed in a flock of ewes in the county of Suffolk. Twelve ewes were affected. The labia of the vulva were much inflamed, swollen and painful. In some there were ulcerations. There was purulent discharge. The ram which had served them could not be examined. Pledgets of cotton were impregnated with pus from the discharge, and one was inserted in the vulva of a ewe and another in the sheath of a wether and a third in the vulva of a cow. The result was negative in the ewe and the cow. With the wether it was observed, on the second day, that there was swelling of the part and formation of scabs, which obliterated the sheath; the fourth day this part was swollen, red, and there was some discharge. Ulcerations and small ulcerative abscesses took place also. Another attempt at inoculation of a sheep and ewe, made fourteen days after, gave a negative result. The pathogenous microbe cause of the trouble could not be isolated.—(*Journ. of Comp. Path. and Therap.*, Dec., 1903.)

EPIZOÖTIC LYMPHANGITIS IN ENGLAND [*Prof. J. McFadyean*].—As a consequence of the South African War, an equine disease, heretofore unknown in Great Britain, has been introduced, and, although the case reported by the author has been

observed in an army horse, condemned and sold at auction, there is room to fear that private horses will not remain exempt from it. This case is recorded to call the attention of veterinarians to the possibility of meeting with the disease, and also to remind them of the chances of error of diagnosis with farcy. It was a roan gelding, which had a swelling of the near hind leg, extending from the foot up to the thigh. Between the coronet and the middle of the shank there were several running sores and immediately above the hoof a rather large ulceration. The animal was lame and in poor condition. On the inside of the leg, a little above the hock, there was a subcutaneous abscess which, when punctured, gave a quantity of pus, some of which was immediately examined under the microscope and served to settle the nature of the disease by the presence of large numbers of cryptococci. To confirm the diagnosis and avoid all possibility of error, mallein was resorted to, but negative results were obtained. The cryptococci were readily observed with a magnifying power of 500, or better of 1,000. No method of coloration was needed. In his article, the author concludes by saying that the fact of the introduction of epizootic lymphangitis in England shows the mistake of bringing back army horses from South Africa, and specially to allow them to be sold to private individuals. The long period of incubation of the disease and the fact that several cases have already been observed in army horses since the beginning of the year, justify the supposition that the animal subject of the report was infected when he was sold. Several thousands of horses have in a similar way been distributed all over the land, and now the whole country may be considered as being permanently infected.—(*Journ. of Comp. Path. and Therap.*, Dec., 1903.)

FRACTURE OF THE OS SUFFRAGINIS AFTER NEURECTOMY [*A. R. Routledge, F. R. C. V. S.*].—A twelve-year-old horse has been lame periodically in the left fore leg. He started in good condition, then after a short time the lameness makes its appearance, and it increases more and more. Sometimes one day of rest is sufficient for him to resume work; at others he is laid up for a longer time. This condition has existed for twelve months. But while the lameness becomes more frequent, a bony deposit has taken place on the first phalanx, and finally the useless animal is neurectomized in the median nerve. After two weeks he resumes work. But the lameness returns and ulnar neurectomy has to be performed. Twenty days after he resumes his work, but only for three days, when he suddenly becomes

very lame. At rest, the fetlock was held in the normal position, but as soon as extra weight was thrown on the limb by putting a man on his back, turning the head to the near side or during progression, the fetlock sank to the ground and the toe cocked up in the air with the heel downwards. There is a fracture of the os suffraginis. At the post-mortem there were found: a transversal fracture of the os suffraginis, from side to side, dividing it into two fragments, one of which is crushed in several pieces. There is rarefying osteitis. The perforans tendon is softened and loosened from its attachment to the os corona. The navicular bone was also diseased.—(*Vet. Record, Jan. 16, 1904.*)

THREE CASES OF RUPTURE OF THE HEART [*H. Taylor, M. R. C. V. S.*].—The first was observed in a cob. Kept in the stable for a cold for two days, he seemed to be doing well, when on the third day he appeared in great pain. Called to see him, the author found him suffering a great deal, with staring, haggard countenance, and an abundant discharge of foaming liquid escaping through both nostrils. The sides of the stalls and the floor are spattered with it, as the animal in his efforts for breath and shaking his head up and down, has sent it in all directions. The mouth is partly open, the lips retracted, mucous membranes are pale, pulse is scarcely perceptible, the sounds of the heart cannot be heard, the body is covered with a cold sweat. After two hours' suffering, the animal drops and dies without a struggle. The discharge from the nose becomes thick and foaming, mucous membranes of red color. At the post-mortem, the pericardium is found full of blood; there is more in the chest; the right auricle is ruptured on its upper face, the laceration measures one inch in length, half an inch in width. The cavities of the heart were empty. The myocardium was rather soft and slightly yellowish. The second animal fell all of a sudden, without having ever exhibited any symptoms of sickness. With him, the chest contained a large quantity of blood; there was a rupture of the right auricle, four inches long. The heart was slightly hypertrophied, the walls thinner than normal, the tissue fatty. Being treated for a dietetic trouble the third animal gave manifestations of heart trouble and died. The organ was hypertrophied, the walls thin, the tissues of the heart soft and yellow. The right auricle had a rupture four inches in length.—(*Vet. Record, Jan. 30, 1904.*)

SARCOMA OF THE PENIS IN A DOG—AMPUTATION [*H. Taylor, M. R. C. V. S.*].—An old Irish terrier, twelve years of age, had a paraphymosis, due to a tumor on the end of the

penis, which, in addition to appearing unsightly, used to bleed and soil the carpets. The tumor was as big as a nutmeg. The prepuce had also several others much smaller. The large growth had been there for several months, and it was evident that amputation was the only means of relief. The dog was chloroformed, the penis drawn out of the sheath, and a catheter introduced and secured by a ligature applied a little above the place where the amputation was to be made. With a circular incision the penis was then divided, carefully saving the urethral canal in its entirety. The incision was made a little back of the point of the os penis, a small portion of which had to be excised. The urethra was then carefully isolated from the inferior border of the body of the penis for about half an inch in length, and the diseased portion of the organ was then removed. The urethral canal was then slitted with three incisions in three portions, which were secured with stitches on the skin of the upper portion and lateral faces of the stump of the penis. The ligature was taken off, the catheter removed; there was but little hæmorrhage; the stitches were taken out on the fourth day, and when the dog was examined five months later, there was no indication of stricture, and the end of the penis presented a round, smooth surface. The nature of the growth was proved by microscopic examination.—(*Vet. Record*, Feb. 6, 1904.)

FRENCH REVIEW.

By Prof. A. LIAUTARD, M. D., V. M.

TEMPORO-MAXILLARY ARTHRITIS [*M. A. Huret*].—Its treatment is always justified. A mare receives a kick on the left temporal region and arthritis sets in. A week later, the animal is cast and the fistula is freely incised. A necrosed piece of bone is removed, the temporal bone thoroughly scraped, the articulation is freely washed with Van Swieten's solution and permanganate ($10\frac{1}{100}$), then an injection of pure tincture of iodine is thrown in. The wound is covered with iodoformed compresses. The same dressing was kept up for several days, and by degrees the synovial discharge grew less and less. A pencil of nitrate of silver was then introduced to try to obtain complete arrest of the synovial flow. In three days a thick scab was formed, the articulation was closed, cicatrization went on rapidly, and recovery was completed in a month from the day

the injury was received.—(*Revue Génér. de M. Vet.*, Nov., 1903.)

ENCEPHALOID SARCOMA OF THE TESTICLE IN A HORSE [*Peuch and Ball*].—Aged 11 years, a stallion has, for several months, in the testicular region, a swelling, which is rapidly enlarging and interferes with his actions. This swelling is not painful, hard, not adherent to the envelopes, and feels like an hypertrophied testicle. The cord is thick. It is evidently a sarcocele, which predisposes the animal to hernia and demands interference. It is not a glanderous sarcocele—the horse does not react to mallein. The operation of castration is performed. Scrotum and dartos are divided and pushed upwards; a large straight wooden clamp is applied on the cord; then the fibrous coat is divided and the testicle removed. The animal had no bad effect from the operation, and was able to resume work a few days after the removal of the clamp, which was done on the tenth day after the operation. The testicle was more globular than usual, its external surface was slightly bosselated, its consistency was firm and elastic. It measured 17 centimetres from forward backwards, and weighed 1310 grammes. Its structure examined with the microscope revealed its sarcomatous nature.—(*Journal de M. Vet. and Zoötechnie*, Oct., 1903.)

HÆMORRHAGE AT THE BULB AND CEREBELLUM IN A DOG [*P. Lablanc*].—This case is interesting by the manifestations observed during life and the lesions of the post-mortem. A dog for a few days has shown locomotory troubles and carries his head in a peculiar way—that is, sideways; the tip of the nose turned to the left, and the line of the eyes having a rather vertical direction. The right eye is red and full of tears. The dog has a tendency in walking to turn round in the direction the head is bent, yet his intelligence is good; if coaxed he moves the tail friendly; if scolded he goes away. The appetite is poor, micturation and defecation normal. These symptoms lasted for a few days, then became more marked, and finally the dog died. The diagnosis had been made of hæmorrhage of the cerebellum and rachidian bulb. It was confirmed at the post-mortem. There was an hæmorrhagic centre on the inferior face of the bulb, to the right side, which extended into the substance of the cerebellum. There was another also on the left side, much smaller and slightly outside of the median line.—(*Journ. de M. Vet. and de Zoötechnie*, Oct., 1903.)

DENTAL DUPLICITY—TWO INFERIOR DIVIDERS UNITED [*Leon Dupas*].—In their work on the external form of the

horse, Goubaux and Barrier describe a dental irregularity by union of the superior dividers, and they remark that the abnormality is very rare. In this case the irregularity is different. At the lower jaw, instead of one divider on the right side, there are two united together in front of each other, while in Goubaux and Barrier they were side by side. The tooth which stands back has the same form as the left divider, but its posterior face is concave, instead of convex, and has a longitudinal groove. The front tooth is more regularly conical and its round table is much smaller.—(*Rec. de Med. Vet.*, Nov. 15, 1903.)

SPASMS OF THE THROAT DUE TO THE PRESENCE OF A HAIR IN THE PHARYNX [*G. Joly*].—This is probably unique in the history of foreign bodies in the organisms of animals. A thoroughbred mare, winner of several races, is sold to an officer. She feeds poorly, and from time to time, during and after meals, has spasms of the throat, with cough, salivation, uneasiness, general excitement, roaring; she stretches her head on the neck, and has great difficulty in breathing. These symptoms subside after the swallowing of a little water or again after several spells of coughing. Similar manifestations had already been observed in another horse which had been operated by arytenoidectomy, and on inquiring about this case, only marks of cicatrization from actual cauterization in points were detected on his throat. The length of time passed since the exhibition of the symptoms, the characteristic one of laryngeal spasms, the absence of arytenoidectomy and of foreign body suggested the possibility of a pedunculated tumor of the pharynx. Operation: The mare, cast and chloroformed, is tracheotomized. The mouth is wide open with speculum, and the hand and arm introduced, explore carefully the mouth, fauces, pharynx, and principally the posterior face of the epiglottis. Nothing abnormal is detected. The arm and hand are withdrawn, a woman's long hair is twisted round the wrist of the operator. A second exploration is again negative. The animal is relieved, the wound of tracheotomy treated. Cicatrization goes on rapidly and the spasms never return. Some two weeks later she is put to training, breaks down, and is sold. But since then she has never had any respiratory or digestive troubles; she roars no more. No doubt the hair was the cause of the mischief.—(*Revue Générale*, Dec. 1, 1903.)

RUPTURE OF THE RIGHT CARDIAC ARTERY [*M. L. Magnin*].—Rare observation, it is the second related in a veterinary journal. A mare, while exercised walking, suddenly stretches her

neck, flexes on her legs, whinneys once or twice, goes on ten yards more and drops dead; in three minutes the act is over. As parasitic aneurisms of the great mesenteric have been frequent lately in that vicinity, death is attributed to an analogous lesion. At the post-mortem the entire organism is found normal, except the central cardiac apparatus. The pericardium is distended with a certain quantity of blood partly clotted, measuring about six litres. This has escaped by a rupture of the right cardiac artery—a longitudinal tear, irregular, zigzag like, at the point where the artery passes under the anterior auricle. There is a clot of blood as big as the two fists at the base of the heart on the anterior right and posterior faces of the aorta trunk. The inside of the heart is normal.—(*Rec. de Med. Vet.*, Nov. 15, 1903.)

PARALYSIS OF THE RADIAL NERVE IN A COW [*Mr. Bru*].—This animal, very rebellious to be covered, is secured in a peculiar way against a farm wagon, and when the bull is to serve her she struggles, and falls. When she is let loose, she gets up with difficulty and cannot carry weight on the left fore leg. This is flexed forward, and drags on the ground by the anterior face of the fetlock and of the phalanges when she is walked to her stall. She is treated by an empiric, who applied mild sedative frictions on the shoulder. After a week there is only slight improvement. The author was called, and found the animal lying down. Made to get up, she gave away several times on the left fore leg, resting on the foreface of the fetlock and phalanges. After several attempts she succeeded, not by flexing the knee, but by raising the shoulder, in placing the plantar face of the foot on the ground, and rested perfectly well on it. When made to walk, she did it on the fetlock, with phalanges flexed backwards. At the shoulder there was no swelling nor displacement of joints. Scapular muscles were normal, but those of the arm and forearm were atrophied, especially in the anterior and external part of the region. It was evidently a case of paralysis of the extensor muscles of the metacarpus and of the phalanges, which receive branches of the radial nerve. This nerve had been injured during the struggles of the cow. A severe blister was applied and the animal let loose every day. After eight days there was considerable improvement, in twelve the animal was to work.—(*Revue Vétérin.*, Dec., 1903.)

CANALIZATION IN THE INTESTINE OF AN OVARIAN ABSCESS—DEATH BY INTESTINAL STRANGULATION [*Armand Henry*].

—The second on record, this case was observed in a mare, aged eight years, which was taken with colic and died in fifteen hours after presenting abdominal pains, which showed nothing different from ordinary cases of similar nature nor anything which might indicate the lesions found after death. On opening the abdomen, attention was called immediately to a volvulus of the last portions of the small intestines. The organ was highly congested and even gangrenous in patches. This was evidently the cause of death. The volvulus was formed by a complete twist of the small intestine *round a cord*, whose relations were only observable after the intestine was entirely returned to its place. Then it was found that this cord was at one end inserted upon the hypertrophied left ovary and by the other on the small intestine at about 1m. 50 from the cæcal insertion. The cord measured 12 centimetres in length, and was irregularly conical. It had the size of a lead pencil and was hollowed in its whole length. A probe introduced in its canal from the intestinal end reached the ovary and brought out pus. The ovary was as big as the two fists, hard, and when it was cut, an old abscess was exposed. The cavity contained a yellowish concreted mass of pus. All the other organs were healthy. In the history of the mare it was observed that in three years she had had several attacks of colic, which were attributed to the fact that she was a bad cribber. She once exhibited symptoms which were regarded as due to nephritis.—(*Rec. de Med. Vét., Dec., 1903.*)

A PROMOTER of the goat industry recently sought to interest the Chicago City Health Department in a scheme to equip about 40 stations in Chicago with 10,000 goats for the purpose of supplying milk to Chicago infants, who do not thrive on the cows' milk commonly sold in the city. The city officials did not take to the idea for the reason that they could not see how the plan proposed could be put into practical operation.

EVEN if you can read the papers when you receive your copy of "Proceedings" of the St. Louis convention, you will miss the clinic, you will miss the pathological exhibit of the Bureau of Animal Industry, you will miss the friendly handshake of old companions and friends, and the opportunity to form new and lasting friendships; you will miss the opportunity to learn much, not only at the meeting, but in private interviews with veterinarians from everywhere. And you will miss the greatest World's Fair ever held. Can you afford it?

ARMY VETERINARY DEPARTMENT.

PROPOSED NEW PETITION OF ARMY VETERINARIANS.

The following letter, draft of Bill and explanation, has been sent to us by Dr. Olof Schwarzkopf, 3d Cavalry, with the request of publication in the "Army Veterinary Department." He has forwarded the letter and inclosures to most army veterinarians, but not all could be reached, and he requests that those who have objections or wish to propose alterations, may write to Dr. J. H. Gould, 11th Cavalry, Fort Riley, Kansas.

FORT ASSINNIBOINE, MONT., May 23, 1904.

DEAR DOCTOR:—Perhaps you know that our last petition to the War Department has been a failure. As a result a new petition is being prepared by our colleagues at Fort Riley, asking for a commission of a first Lieutenancy without examination. In my judgment any such Bill is again destined to failure, with a loss of time of a year or more.

Inclosed I submit to you a draft of a Bill suggesting such changes in the veterinary service as appear most needed and helpful in our professional and individual advancement in the Army. A brief explanation is appended.

I have forwarded a copy to Fort Riley, asking our colleagues there to accept this Bill as a basis for their deliberations. Meanwhile I wish to have your personal views, and ask that you kindly reply stating whether you agree with me, and if not, what alterations you propose, and the reasons for same.

Sincerely yours, OLOF SCHWARZKOPF,
Vetr. 3d. Cavalry.

* * *

AN ACT TO PROMOTE THE EFFICIENCY OF THE VETERINARY SERVICE IN THE UNITED STATES ARMY.

Be it enacted by the Senate and House of Representatives, etc.

SEC. 1. That hereafter the veterinarians of Cavalry and Artillery, as now provided for by law, having five years of service and over, shall have the *grade*, pay and allowances of first Lieutenant, mounted, and shall be designated as "veterinarians": Provided: That promotion to the grade of veterinarian shall be made by seniority, after such examination for promotion as to general efficiency and professional qualifications, as the Secretary of War may direct.

SEC. 2. That the President may, with the advice and consent of the Senate, select from among the veterinarians so commissioned, three (3) veterinarians, who shall act as Chief-veterinarians, one for the Cavalry, one for the Artillery, and one for the Quartermaster's Department: Provided: That such acting Chief-veterinarians shall have been duly commended for exceptional competency, by their Regimental or Battalion Commanders, approved through military channels.

SEC. 3. That the veterinarians of Cavalry and Artillery, as provided now by law, having less than five years of service, shall have the *grade*, pay and allowances of second Lieutenant, mounted, and shall be designated as "assistant-veterinarians."

SEC. 4. That hereafter the veterinarians of Cavalry and Artillery, and the contract-veterinarians of the Quartermaster's Department, as authorized by law, shall be graduates of recognized universities or veterinary colleges having a course of not less than three years of nine months' duration.

SEC. 5. That nothing in this Act shall be construed as depriving any veterinarian of his appointment or contract in the Army, or as altering the Regimental and Corps assignments of veterinarians, or as increasing the number of veterinarians, as now authorized by law.

SEC. 6. That all laws and parts of laws inconsistent with the provisions of this Act be, and the same are hereby, repealed.

* * *

BRIEF EXPLANATION OF THE FEATURES OF THE BILL.

1. Note, that the purpose of the Bill is to promote the *efficiency of the veterinary service*, the only just reason for our improvement in the Army which will be recognized by the War Department and Congress. The idea of a *Veterinary Corps* is avoided because of old antagonism. To make sure, Sec. 5 maintains the Regimental and Corps assignments. Yet, we secure a working Organization under technical direction of acting Chief-veterinarians who will naturally also act as veterinary advisers to the War Department.

2. Note, that the titles are designated as "veterinarians," assistant-veterinarians, etc., and *not* as 2d or 1st *Lieutenant and Veterinarian*. Let us avoid to aspire of military titles which are the prerogatives of military officers, and be proud of our just title. The classification chosen enables us to ask for *grades*. The term *grade* includes *rank*. (See A. R., 1901, Article III, 9.) If we ask for a 1st Lieutenantcy *alone*, we *must*

ask for *rank*, which will at once arouse opposition. (For grades and professional titles compare Chaplain's Act, Sec. 2, G. O. No. 79, War Dpt., May 2, 1904.)

3. Note, that Sec. 3 changes our present *rank* (A. R. 9, line 10) to the grade, pay and allowances of 2d Lieutenant *without* further examination. Having passed an examination which is about equivalent to that demanded of 2d Lieutenants, it ought to be accepted as sufficient. Those of us who do not pass the examination for promotion to the grade of veterinarian after five years of service, thus secure the benefits of a commission with retirement pay, which is urgently needed for our two oldest members.

4. Note finally, that Sec. 4 provides for recognition of army veterinarians as graduates of professional veterinary colleges, a provision which has never been made, the absence of which puts us in a false light in the Army. Our limited educational standard has ever been, and still is, one of the chief objections raised against our advancement by influential and well-informed officers, who assert that the veterinary officers of foreign armies attain high rank because of the high education demanded of them. We must meet this statement by asking ourselves for a higher standard of education.

* * *

THE "NOCARD TREATMENT" FOR GLANDERS

WAWONA, MARIPOSA CO., CAL., June 6, 1904.

Editors American Veterinary Review:

DEAR SIRs:—In the May number of the AMERICAN VETERINARY REVIEW, I noticed an article pertaining to the "Nocard Treatment of Glanders" in the Army.

I beg leave to state that, with the sanction of Gen. J. M. Bell, I tried to cure glanders in 1900 and 1901, in the Province of Camarines Sur, with repeated inoculations of mallein, without success. In one particular case, I succeeded in allaying all the objective symptoms of glanders. The characteristic nasal discharge ceased, the ulcers disappeared from the Schneiderian membrane, the submaxillary lymphatic glands resumed their normal size and consistency, the animal was high spirited and looked so well that, to the ordinary observer, he would easily pass for a sound horse. I had this animal shot, and upon post-mortem examination, performed in the presence of two M. D.'s and a number of officers, I found the lungs typical of glanders, an abscess in the liver, and the mesenteric lymphatic glands were all enlarged, indurated and ecchymosed.

This case I considered interesting in as much as it exemplified the *so-called* cure by mallein; yet, to my mind, it was simply a typical case of latent glanders.

I am not "from Missouri," but before I place any faith in all these "cures" by mallein, I must see a few more autopsies on some of these *cured* horses.

Very respectfully,

SAMUEL GLASSON, JR., D. V. S.,
Veterinarian 9th U. S. Cav.

* * *

THE "NOCARD TREATMENT" OF GLANDERS.

By OLOF SCHWARZKOPF, Veterinarian 3d Cavalry, Fort Assinniboine, Mont.

(Continued from page 292.)

History of the Second Outbreak in the Philippines.—On August 14, 1901, I was ordered to proceed to Canden, P. I., to examine the horses of another troop of the 3d Cavalry, among which glanders had been reported. It was the rainy season, and after a hard ride of two days through bottomless roads, I arrived there with my escort to find a complicated situation. I was shown four horses, isolated in an inclosure of bamboo poles, which presented highly developed cases of glanders, and a Board of Survey was immediately summoned to have the horses condemned and destroyed. The other horses of the Troop were kept on a picket-line protected only by high stone walls of the ruins of a church of ancient Spanish architecture and glory. On the other side of the church was a temporary canal in which about fifty horses of a mounted Infantry Company, and as many more wagon and pack mules, were kept separately and taken care of by different squads. The country around this village was flat, there was no natural drainage from the floods of rain, and the horses stood in the mud up to their ankles. It was a most unsanitary place by nature, and little could be done to improve it with the means on hand.

On examining the horses of the Troop I found three more cases of nasal glanders and a larger number of other horses which had to be looked upon as more or less suspicious. On the whole it was a thoroughly infected Troop, while the horses and mules on the other side of the church appeared healthy.

The history of the infection of the horses was the same old tale over again. The first case of glanders in this Troop was detected in May, 1900, at Bagnoton de Union, P. I.; but, for reasons unknown, the horse was not destroyed until July 29,

1900. Gradually one case appeared after another, and, within about one year, *fifty-eight* (58) horses had died or had been killed for glanders. A larger number of new horses were then received which had been mingled with the surviving horses, and, at the time of my inspection, there were cases of glanders and suspects among both the survivors and the new horses. "No-card's treatment" certainly appealed as the only salvation. Accordingly I recommended the immediate requisition of the necessary amount of mallein, quarantined the horses of the Troop to prevent the infection of the other public animals, and returned to headquarters to report.

About three weeks later a telegraph from Camden announced the arrival of mallein. In the meantime I had been ill with dysentery, and although recovered and anxious to make the test myself, my commanding officer ordered Dr. S. Gelston, 3d Cavalry to Camden, in my stead, with instructions to proceed on the same lines as had been worked out during the test at Vigan. He made full and interesting verbal reports after each test; but, as he is no longer in the Army, the records of the test are taken from the office of the Troop, now stationed at this garrison. In extract they are as follows:

First mallein test at Camden, September 12, 1901.

Number of surviving horses in infected Troup	84
Proven healthy by first injection	49
Proven infected by first injection	35
	84

The forty-nine non-reacting horses were put on a new picket-line in a new location, and the horse equipments, saddles, bridles, blankets, brushes, curry combs, etc., were disinfected or destroyed. The thirty-five reacting horses were quarantined for a second test. Five of these horses developed acute cases of glanders within a few days, and they were promptly destroyed.

Second mallein test, November 28, 1901.

Number of horses in quarantine	30
Proven healthy by second test	24
Proven still infected	6
	30

The twenty-four non-reacting horses were returned to the

Troop for duty, and the six reacting horses were kept in quarantine for a third test. However, four of these six horses died of acute glanders within less than one month. In the mean time Dr. Gelston had been sent somewhere else, and the Troop had been ordered to Cervantes, Province of Banguet, in a mountainous region, so that the third test on these two horses which remained alive in quarantine, could not be made, and they were taken along with the Troop. They remained healthy thereafter, as did all the other horses of the Troop except one horse, which evidently died of chronic pulmonary glanders about six months later. As I could not find any detailed record of this case in the Troop office, I addressed a letter to the former farrier of the Troop, now Q. M. Sergeant Berkeley E. Barker, Troop D, 3d Cavalry, at Fort Yellowstone, Wyoming, who replies as follows:

"My sick-report book shows that this horse reacted locally to Dr. Gelston's first test; but, as there was no thermic or organ reaction, he considered it a case of septic infection, and returned the horse to duty. He continued poor and emaciated, presenting a hide-bound appearance, with cough, gradually getting worse, until death occurred January 26, 1902. The post-mortem showed one lung almost entirely destroyed, the other about half gone, what remained presenting a dark, ulcerated appearance, also the trachea, but none in the nasal sinuses. The horse never did show any of the usual, visible symptoms of glanders or farcy, such as discharges, ulceration, enlargement of submaxillary gland, etc."

Anticipating that some reader might be led to consider this mallein test as of doubtful value, on account of this reverse case, I also asked the Sergeant whether he considered this test a success so far as the suppression of glanders in this Troop is concerned, to which he replies:

"Yes, Sir, I did consider it a decided success. I also believe, from experience, that it has prevented infection in horses that were exposed to glanders and farcy in its most malignant form for three days at a time."

To this testimony could be added the opinion of the two officers of the Troop, who were most enthusiastic in their praise of the result obtained; but, as the farrier was an intelligent man and performed a large share of the work during both of the tests, and remained with the horses for over one year afterwards, his statement should be entirely creditable.

I shall refrain from making any comments on this test beyond stating my belief that a mistake was made in the case of the horse "with local reaction, but no thermic or organic reaction." We meet such cases in a large number of suspects. They serve as a warning to avoid a hasty decision, and that we can rely only on continued, careful observation and deliberate con-

clusion. In the absence of a veterinarian, such cases are allowed to drag along by laymen in the hope of saving *one* animal, while all the good previously accomplished may be overturned by just one such case. In concluding the report of this mallein test at Camden, I may further express my belief that it was also a "crucial test" for mallein, for the horses of this Troop were certainly hopelessly infected. Nothing short of a slaughter of animals and destruction of equipments by fire would formerly have wiped out such a deep-rooted infection of over one year duration with such a high rate of mortality. Such serious condition is not likely to be faced in civil life in any civilized country, nor in any civilized army but ours. Yet by the scientific and humane "Nocard treatment," seventy-four horses were saved by careful weeding out of suspects, entailing no more than three months' time and labor.

(*To be continued.*)

STERILIZED MILK.—Robertson and Mair give the results of their study of the bacteriology of sterilized milk as supplied by the infant milk depot of Leith. They found bacteria in all but fifteen per cent. of the specimens examined, and reached the following conclusions: 1. The designation "sterilized" as applied to milk sold from municipal depots is wrong and misleading. 2. Every one should be instructed as to the necessity for keeping the milk as cool as possible. 3. Faith in the powers of steam sterilizers should not be too implicit. Each day's supply should be sold on the day on which it is prepared. 4. All bottles, after being taken from the sterilizer, should be placed in warm water and gradually cooled.—(*British Medical Journal*, May 14.)

DOCKING PROHIBITED IN IOWA.—The Iowa House of Representatives has passed a bill to forbid docking horses in Iowa. The committee on animal industry has reported adversely to the bill, but a minority report favored the bill. The minority report was submitted, and then an effort was made to amend the bill by attaching to it a provision in relation to high-checking of horses, but the Speaker ruled this out. The bill then passed by a vote of 68 to 13. During the course of the debate an attack was made on the agent of the American Humane Society, who had been at work for the bill, by accusing her of representing certain firms in Chicago engaged in horse docking, and declaring that the purpose of the bill was to prevent competition in Iowa.—(*Farmer's Advocate*.)

CORRESPONDENCE.

THE RIGHT TO PRACTICE IN NEW YORK STATE—THE RELATION OF AMERICAN COLLEGES TO THE REGENTS' REQUIREMENTS.

BINGHAMTON, N. Y., June 10, 1904.

Editors American Veterinary Review:

DEAR SIRs:—Could I be permitted through the REVIEW to answer a question which is frequently asked relating to the legal status of veterinary diplomas, as it bears upon the rights of the holder thereof to practice in New York? I have received letters from different parts of the country from prospective and actual students of several veterinary colleges, inquiring if a diploma from such college would entitle the holder to take the State examination, and if not would he be allowed to practice as an independent practitioner, or must it be under the protection of a preceptor. We have quite a number of graduates practicing in New York who are not registered and cannot do so legally, either because their college preparation is below the requirement established by law and the Board of Regents of the University of the State of New York, or because such practitioner has not taken the State examination, and also because the college from which some of the diplomas have been issued is not registered by the Regents or is not eligible to registration. Another source for illegal practice is through the medium of misinformation or intended deception on the part of the faculty of some of the colleges through their annual announcements, which hold the inducement that graduates of their college are eligible for the examination and entitled to practice in New York. The veterinary law has purposely set the standard of educational requirement high, it befriends the principal to get knowledge, it offers no inducement to the charlatan, it is sincere in its effort to protect the stock-owners of the State. The law demands that the student upon entering a veterinary college must possess the equivalent of a high school education, and that he must pursue his veterinary studies in not less than three full years, including three satisfactory courses in three different academic years, and this must be done in a veterinary school that is registered by the Regents as maintaining a standard of excellence in harmony with the educational and medical laws of the State. This, therefore, is the passport to the examination by the State Board. The Regents of the University of

the State have established regulations whereby medical and veterinary schools are registered or accredited as maintaining satisfactory standards and are in two groups.

Group 1. Those registered or accredited for admission to the licensing examination of New York State after formal application authenticated by seal or affidavit and the signature of the executive officer.

Group 2. Those registered or accredited for admission to *registered* medical schools.

The registration of the medical schools has reference to the professional educational requirement and not to the general preliminary or the combined baccalaureate and medical which receive independent action. Schools are registered in full, or accredited in three classes, and all medical schools of standing will be found in one group or the other. It may be that strong schools are found in the second group from lack of formal application for registration in the first group.

Registered Schools. These are schools that require the full four-year medical course for matriculates subsequent to Jan. 1, 1898, who graduate subsequent to Jan. 1, 1902, and that make no allowance whatever for admission to advanced standing to graduates of schools of dentistry, pharmacy, veterinary medicine, osteopathy and the like, and that also meet New York's requirement in property, instructors, students, library, laboratory and clinical facilities.

Accredited Schools. These are of three classes:

1. Those that can be registered as having three full years of medicine.
2. Those that can be registered as having two full years of medicine.
3. Those that can be registered as having one full year of medicine.

VETERINARY MEDICAL SCHOOLS OF UNITED STATES AND CANADA.
REGISTERED OR ACCREDITED JUNE 1, 1904.

Alphabetically arranged by states and provinces.

UNITED STATES.

District of Columbia.

Group 2.—For admission to New York Veterinary Schools.—

United States College of Veterinary Surgeons—Class 1.

222 C. St., N. W., Washington; Dean, C. Barnwell Robinson.

Illinois.

Group 1.—For admission to New York Licensing Examination.—

Chicago Veterinary College—registered.

2537-39 State St., Chicago; Pres., R. J. Withers.
McKillip Veterinary College—Class 1.
1639 Wabash Ave., Chicago; Dean, F. S. Schoenleber.

Indiana.

Group 2.—For admission to New York Veterinary Schools.—
Indiana Veterinary College—Class 2.
Market St. (Davidson and Pine), Indianapolis; Dean, George H. Roberts.

Iowa.

Group 2.—For admission to New York Veterinary Schools.—
Veterinary Department, Iowa State College—Class 1.
Ames; Acting Dean, W. M. Beardshear.

Michigan.

Group 1.—For admission to New York Licensing Examination.—
Grand Rapids Veterinary College—Class 2.
Butterworth Ave. and Indiana St., Grand Rapids; Dean William A. McLean.

Missouri.

Group 1.—For admission to New York Licensing Examination.—
Kansas City Veterinary College—Class 1.
1404-6 Holmes St., Kansas City; Dean, Sesco Stewart.

New York.

Group 1.—For admission to New York Licensing Examination.—
New York-American Veterinary College.
New York University—registered.
141 W. 54th St., New York; Dean, Alexander F. Liautard.
New York State Veterinary College at Cornell University—
registered.
East Ave., Ithaca; Dean, James Law.

Ohio.

Group 1.—For admission to New York Licensing Examination.—
College of Veterinary Medicine, Ohio State University—Class 1.
N. High St., Columbus; Dean, David S. White.

Pennsylvania.

Group 2.—For admission to New York Veterinary Schools.—
Veterinary Department, University of Pennsylvania—registered.
Woodland Ave. (Cleveland and Spruce), Philadelphia; Dean, Leonard Pearson.

Washington.

Group 1.—For admission to New York Licensing Examination.—
School of Veterinary Science, Washington Agricultural College
and School of Science—Class 1.
Pullman; Pres., E. A. Bryan.

CANADA.

Ontario.

Group 2.—For admission to New York Veterinary Schools.—
Ontario Veterinary College—Class 2.
40-46 Temperance St., Toronto; Prin., Andrew Smith.

Quebec.

Group 1.—For admission to New York Licensing Examination.—
School of Comparative Medicine and Veterinary Science (Laval
University)—Class 1.

185 St. Denis St., Montreal ; Director, V. T. Daubigny.

Very truly yours,

CLAUDE D. MORRIS,

Secretary State Board of Veterinary Medical Examiners.

AZOTURIA AND PARTURIENT PARESIS.

PROSPECT, OHIO, Feb. 8, 1904.

Editors American Veterinary Review :

DEAR SIRS:—In the February number of the most progressive AMERICAN VETERINARY REVIEW the foundation is laid for an exchange of views on azoturia and parturient paresis. That both diseases are auto-intoxications but little doubt can exist, although Dr. Corwin's name of motor-ataxia-myodynia does not appeal to the writer. Whether we are dealing with a primary myositis and subsequent disease of the nervous system, especially the crural nerve, or *vice versa*, is not quite certain, although the writer is rather inclined to believe in a primary myositis followed by disease of the nervous system. This view is based upon the fact that the writer has seen a number of cases of azoturia arise in the operating room, the horse being securely tied and struggling violently ; in other words, a struggling myositis, with all the symptoms of azoturia, and invariably fatal results. That is as far as the writer's Latin on azoturia goes.

Now, as to parturient paresis. For several years the writer made some special studies on this disease, resulting in the production of an antitoxin. This antitoxin has been used in a great many instances and with most excellent results, but some subsequent observations have shown that not the antitoxin but its method of application was the curative and preventive factor in parturient paresis. It matters not what you inject into the gland as long as it is aseptic, and, above all, fully distends the udder. By that is meant that the udder is so utterly filled with either sterilized water, saline infusions, iodide of potassium, trikresol, and water, air or oxygen, until the teats stand out boldly. Some doubt exists in the mind of the writer whether oxygen or a saline infusion is the more beneficent, either one combined with a hypodermic injection of one grain of strychnine sulphate. All around air and oxygen are the best ones to employ, as asepsis and quickness are most easily met with. Here is my confession

on parturient paresis: As long as the cow has to support the calf, things are nicely balanced in the mother, but as soon as the calf is born the amount of nutrition which the cow has been giving to the unborn for nine months, is suddenly thrown entirely upon the cow, and since she cannot use it, having plenty nutritive elements within herself for her own support, that very amount of food which she is to give the calf and no longer can give the calf, results in metabolic changes, followed by the production of a powerful and intensely depressing poison, expressed by a paretic state of the nervous system. By exciting the secretory functions of the udder a recovery takes place, provided the case is one of parturient paresis pure and simple. Right here is the hitch. Some practitioners have the best of results with iodide of potassium, others utterly fail, and so on. What points does the average veterinarian take into consideration when he makes the diagnosis of parturient paresis. If she had a calf recently and cannot get up or tosses about, etc., that settles the diagnosis of parturient paresis. As previously said, the writer has given this interesting disease quite some thought, and believes firmly that there is either another disease closely simulating parturient paresis, of sapræmic origin, calling it paralytic septic metritis, or that it is parturient paresis complicated with a sapræmic state. Not being sufficiently qualified to indulge in ultra-scientific research, this question is to be settled by the laboratory veterinarian.

On consulting the *Jahresbericht der Veterinar Medicin*, the following interesting data are found: Dr. Schmidt-Colding, to whom we are indebted for the iodide of potassium treatment, states that he prefers to use a 1 per cent. iodide of potassium solution, immediately followed by a liberal filling with sterilized air.

To return to paralytic metritis: Here quite a low percentage is saved. As far as the writer is concerned, the differential points between this latter disease and parturient paresis rest in the temperature, which is elevated in paralytic septic metritis, and especially in a manual examination of the os uteri. In those cases where the os uteri is flabby and covered with a thin slime and mixed with yellowish flakes, no recovery, or a very tardy one, is to be expected. In these cases the discharge is inodorous. In those cases where the discharge is smelling badly and thin and brownish, no recovery, or at least rarely so, will take place. In those cases where the os uteri is closed and covered with the regulation slime, one which is tenacious and

free from flakes, iodide of potassium or anything else which is aseptic, and injected into the udder, distending it fully, will bring about a complete and, comparatively speaking, rapid recovery. Of course, it is understood that the cow is given proper care, as keeping her upon the left side, with leg folded under the body, head and neck propped, removal of the afterbirth, irrigation of the womb with antiseptics, and last, but not least, no medicine per mouth. W. E. A. WYMAN.

"A CURE FOR GLANDERS."

OMAHA, NEB., June 11, 1904.

Editors American Veterinary Review:

DEAR SIRs:—I found the enclosed clipping published in the *Nebraska Farmer*, date June 9. It was printed without comment by the editor, and I presume there will be a great rush amongst some to try this "specific". I think the best advice, or the most practical was to get out of the way quickly after the nostrum was administered.

Very truly yours,

G. R. YOUNG, D. V. S.

The clipping referred to is as follows:

"CURE FOR GLANDERS.—This disease is also known as influenza, strangles, distemper, catarrhal fever and nasal gleet. All are attended to a greater or less degree by loss of appetite and discharge from the nostrils and sometimes fever. I have a very simple and inexpensive treatment which I have never known to fail to effect a cure. Here it is in brief: Cast the animal. Select, if possible, soft ground for this I always rope same as when 'subduing' in the 'breaking' process. When the animal 'gives up' he lays down of his own accord thus reducing the danger of injury to a minimum. When the animal is down, have a strong man hold the nose up—*i. e.*, stand the head on end. Turn into each nostril a tablespoonful of granulated sugar. Follow this with a half pint of kerosene in each nostril; a long-necked bottle is best for this. Turn it in as the animal inhales. When both sides are treated, free the animal and keep out of his way, as he will do considerable blowing. Great care should be exercised not to get any pus on the hands or face. If you do, wash it off immediately. If this is done when the first symptoms appear, one dose will cure. If further advanced, repeat the operation every two or three days until cured. If abscesses are formed under the jaw, opening should be made to allow the escape of pus.—H. H. WATT, York, Neb."

BIBLIOGRAPHY.

DICTIONNAIRE VÉTÉRINAIRE (Veterinary Dictionary.) By P. Cagny and H. Y. Gobert. Published by J. B. Baillière et fils, Paris.

In the REVIEW of August, 1902, I reviewed the first volume of this work. To-day I must consider the second volume, which completes the work. In speaking of the first part I remarked how well the plan followed by the authors had been gotten up and how indeed they had succeeded in making a practical work, scientific without being dogmatic—a work which would bring before the practitioners and the students, to whom it was addressed, a concise *résumé* of the present knowledge, as well as the indications of medical and surgical therapeutics generally admitted and sanctioned by practice.

The second volume contains 851 pages, with a little supplement, and is illuminated with 932 illustrations and four colored plates—thus making the entire work one of 1600 pages, with 1800 illustrations.

In looking over the material of the second volume, from Letter I to the end of the alphabet, we find lots of information, which, as the authors say, has been obtained from the experience and writings of many of the French authors (Chauveau, Nocard, Trasbot, Cadeau, Leclainche, etc.), in fact the cream of French veterinarians.

With the illustrations one is reminded of his rusty anatomical knowledge, gets fresh information for surgical manipulations, instruments or dressings, etc.

As I have said before, the dictionary is a good addition to French veterinary literature, and I will repeat the query: When will such a work find its way into ours? A. L.

DR. W. H. DALRYMPLE, of Louisiana, is visiting his aged mother in England, she being in her 90th year. He expects to return in time for the St. Louis meeting. We have no doubt the Doctor will utilize his spare time aboard ship in producing something of value for the meeting. He is always interesting, though, in whatever subject he engages, his great versatility and sound judgment giving to his remarks a charm which rivets the attention of veterinarians.

HAVE you the moral right to remain at home while your fellow veterinarians are at St. Louis striving to help you through advancing the interests of the profession which you have espoused?

TAME ANIMALS I HAVE KNOWN.

A thick-fleeced lamb came trotting by ;
 " Pray, whither now, my lamb ? " quoth I.
 " To have," said he, with ne'er a stop,
 " My wool clipped at the baa-baa shop."

I asked the dog : " Why all this din ? "
 Said he : " I'm fashioned outside in,
 And all my days and nights I've tried
 My best to get the bark outside."

A hen was cackling loud and long.
 Said I to her : " How strange your song ! "
 Said she : " 'Tis scarce a song ; in fact,
 It's just a lay, to be eggs-act."

I asked the cat : " Pray tell me why
 You love to sing ? " She blinked her eye,
 " My purr-puss, sir, as you can see,
 Is to a-mews myself," said she.

A horse was being lashed one day.
 Said I : " Why don't you run away ? "
 " Neigh, neigh ! my stable mind," said he,
 " Still keeps its equine-imity."

I asked the cow . " Why don't you kick
 The man who whips you with the stick ? "
 " Alas ! I must be lashed," said she,
 " So I can give whipped cream, you see."

—*Saturday Evening Post.*

THE REPORT OF THE ENGLISH TUBERCULOSIS COMMISSION.
 —The Royal Commission, appointed in August, 1901, to investigate the relation of the tubercle bacillus of human and bovine origin, have made the following report : " We have most carefully compared the tuberculosis set up in bovine animals by material of human origin with that set up in bovine animals by material of bovine origin, and so far we have found the one, both in its broad general features and in its finer histological details, identical with the other. Our records contain accounts of post-mortem examination of bovine animals infected with tuberculosis material of human beings which might be used as typical descriptions of ordinary bovine tuberculosis. This, in the judgment of the commissioners, seems to show quite clearly it would be unwise to frame or modify legislative measures in accordance with the view that human and bovine tuberculosis bacilli are specifically different or that the disease caused by one is wholly different from the disease caused by the other."

SOCIETY MEETINGS.

AMERICAN VETERINARY MEDICAL ASSOCIATION.

PRELIMINARY ANNOUNCEMENT OF PROGRAMME.

5249 ADDISON ST., PHILADELPHIA, PA., June 24, 1904.

Editors American Veterinary Review:

DEAR SIRs:—I have the following papers to announce in addition to those reported in the June issue of the REVIEW:

"Vesicular Exanthema of Horses," Dr. Paul Fischer, Columbus, O.

A paper (subject not selected), Dr. John W. Adams, Philadelphia.

"Canine Distemper," Dr. Lemuel Pope, Jr., Portsmouth, N. H.

Thus far none of our Canadian members have offered a contribution to the programme, but, taking into account their enthusiasm and intense interest in the progress and welfare of our Association, it is not to be doubted that we will have abundant aid from that quarter. I expect to be able to set forth in the printed announcement a literary programme replete with good features and showing that no section of our membership has failed to do its part. The copy for the announcement must be in the hands of the printer by July 10th and it will be necessary for those who desire to take part in the programme to report to me prior to that date. A departure from the usual custom will be made this year in that the duty of opening the discussion of each paper will be assigned to two members. It is thought that this plan will serve to get the discussion well started and to encourage a full discussion of each paper, something that is extremely important.

Dr. J. C. Norton, of Phoenix, Arizona, one of our members and President of the Interstate Association of Live Stock Sanitary Boards, informs me that that organization will hold its annual meeting in St. Louis Aug. 23d to 25th, and says that he is very anxious that the veterinary profession be well represented at that meeting. He extends a cordial invitation to all of our members to be present, and it is hoped that as many as possible will arrange to remain in St. Louis so that they may have the benefits of that convention.

I am authorized to announce that at our clinic, Dr. C. C. Lyford, of Minneapolis, will operate for quittor or sidebones, or both, and that Dr. W. C. Holden, of Delphos, O., will perform

oöphorectomy upon the mare or a cryptorchid castration or both, depending upon the material available. The other part of the clinical programme has not yet been completed by the local committee, but assurance is given that an excellent clinic will be provided.

Dr. Chester Miller, Chairman of the Committee of Arrangements at St. Louis, informs me that after careful investigation his committee has decided upon headquarters, and has succeeded in fixing reasonable rates for accommodations. Our headquarters will be at the Monticello Hotel, corner of Pine Boulevard and Kingshighway. The convention hall and World's Fair grounds can easily be reached from the hotel, as it is right at the edge of the park in which the Exposition is being held. The hotel is reached from Union Station by the Laclede Avenue cars in a 25-minute run. The rates will be \$6 per day for a room with private bath to accommodate four people to a room. This will be \$1.50 per day each. The proprietor is giving special rates and says he will turn the entire hotel over to us if we can utilize 100 rooms. He is desirous of filling every room and will give the above rate to any one directed there by any member of the Association. He desires a minimum estimate of the attendance by July 20th. Any one who reads this and intends to go to St. Louis at the time of our meeting will confer a favor upon the local committee and at the same time solve for himself the knotty problem of accommodations at the World's Fair by writing to Dr. Chester Miller, 5230 Ridge Avenue, St. Louis, stating the time of his arrival and the number in his party. Dr. Miller says, "I am satisfied we have one of the nicest and most comfortable hotels in the city."

Our convention hall will be located on the World's Fair grounds and our clinic will probably be held in a building which is located inside of the grounds. Dr. Miller reports that other matters in connection with the local arrangements are progressing satisfactorily and that plans will be completed within a short time.

I desire to call special attention to the exhibit by the Bureau of Animal Industry of the United States Department of Agriculture at the World's Fair. I have been informed that this is the most extensive exhibit the Bureau has yet made, and that it alone would repay a trip to St. Louis to those interested in veterinary medicine. As our headquarters will be right at the edge of the Fair grounds, and as our sessions and clinic will be held on the Fair grounds it may be said that this exhibit of the Bureau

of Animal Industry really forms an integral part of our convention.

It seems that never in the history of our Association has the prospect for a meeting been so good, or the attractions so great as offered this year, and there should not be the least doubt in the mind of any veterinarian, or anyone else with an interest in veterinary affairs, that he should visit St. Louis during the Exposition, and that by far the best time to make that visit is at such dates as will include the 41st annual convention of the American Veterinary Medical Association. This is the year, and St. Louis is the place for the veterinarians of America and their friends to conspire to make a meeting which will ever remain historic in the annals of the Association. If it is not done now, an opportunity will be lost, the like of which may not recur for many a year. It can be done if each will arouse himself to a full appreciation of his duties and responsibilities to a great profession.

Much has been said in reference to the rates charged by hotels in St. Louis. It has been asserted that these rates have been exorbitant. Whatever the truth or falsity of this may be in individual instances, it cannot apply to our case because our committee has succeeded in arranging for a fixed rate so that each one who attends the meeting in care of the A. V. M. A. is assured of good quarters, at a reasonable rate fixed in advance.

Very little need be said in reference to rates of transportation. The various passenger traffic associations have fixed rates to continue throughout the progress of the Fair. From these rates there is no variation. There are 10-day rates, 15-day rates, rates by optional routes, and rates for the entire time of the Fair. Any of these rates can be selected by those attending our meeting, each suiting his own purposes. It may even be found by some that they can avail themselves of coach excursion rates, which usually are equal to one fare for the round trip. The 15-day rate, which will probably be suitable for most, averages in most of the associations one fare plus \$2 for the round trip. Each one can very easily determine for himself the accommodations and the rates by consulting his ticket agent, and can select those which he finds the most suitable to his own case.

The social part of the programme will be the World's Fair and various other forms of amusement, the details of which the local committee are working out. The mere mention of this should be sufficient foundation for our members and their friends to picture for themselves the possibilities that attendance

at our meeting will give them in the line of entertainment.

It is expected that the members and visiting veterinarians in laying their plans for going to St. Louis will not forget the other side of the house.

JOHN J. REPP, *Secretary*.

PASSAIC COUNTY VETERINARY MEDICAL ASSOCIATION.

The regular monthly meeting was held at Dr. Geo. W. Pope's office, at United States Quarantine Station, Athenia, N. J., June 7, 1904, with President Dr. Wm. Herbert Lowe in the chair, and was called to order at 8.30 P. M. The following members were present at roll-call: Drs. J. H. Degraw, Wm. J. Fredericks, Geo. W. Pope, Wm. Herbert Lowe, W. H. Lowe, Jr., J. Payne Lowe and W. J. Reagan.

The minutes of last meeting were read and approved.

The Secretary reported that he had received a communication from Dr. J. M. Phillips, of St. Louis, stating that he had accepted the order for the six stomach tubes ordered for members of the Passaic County Veterinary Medical Association, so that they could adopt the latest treatment for cases of acute indigestion, gastric flatulence and gastritis.

The State Board of Examiners will meet at the State Capitol on June 28 and 29, for the purpose of licensing veterinarians to legally practice in the State of New Jersey.

The semi-annual meeting of the New Jersey State Veterinary Medical Association will be held at Newark, Thursday, July 14, 1904.

Dr. Geo. W. Pope read a valuable paper on "Lameness of the Horse," and pointed out some of the difficulties that the veterinarian has to contend with between the learned coachman and the owner. Dr. Pope received a vote of thanks from the veterinarians present for his valuable paper, and it was voted that it be sent to the AMERICAN VETERINARY REVIEW for publication. This paper was then discussed by the members present, and there were some valuable points brought out.

All the veterinarians present at this meeting were invited to inspect the stock in the Quarantine Station at this time. When we reached the stables we found some very valuable animals, such as a herd of Jersey cattle that expect to be at the St. Louis Fair after being released at the Quarantine Station, and some Egyptian goats and a Brandel bull that is to be on exhibition at Coney Island this season.

After the veterinarians had made an inspection of the stock in quarantine, the meeting was adjourned until our next regular monthly meeting, to be held on July 5, at Paterson.

WM. J. FREDERICKS, *Secretary*.

COLORADO VETERINARY MEDICAL ASSOCIATION.

This Association held its semi-annual meeting June 6, at Denver, and the attendance was very good, considering the time of year.

A clinic was held at Dr. M. J. Dunleavy's Hospital. Dr. A. B. McCapes operated on two ridglings, and was highly commended upon his method of casting and operating, which were done very neatly and quickly.

Dr. F. W. Culver, of Longmont, Colo., read a very interesting paper on "Pyæmic Arthritis," which brought forth considerable discussion.

The Association adopted the following resolution :

"WHEREAS, It is the sense of the Colorado Veterinary Medical Association, now in session, that the requirements for matriculation in the veterinary colleges throughout the United States and Canada, should be brought to a higher standard and placed on a uniform basis ; we believe that under the present requirements the educational qualifications of the applicants are in many instances of trivial consequence, provided they have the entrance-fee and can sign their names to the register. Therefore, be it

"*Resolved*, That it is the sense of this Association that in no other way can the standard of the veterinary profession be brought to the high degree which its importance justifies, and we hold that the qualifications for admission should be a high school graduation or its equivalent. Be it, further

"*Resolved*, That the veterinary profession make it its plain duty to see that no charter is granted for any veterinary educational institution, the actual need of which does not exist beyond the shadow of a doubt. We also hold that if the State Examining Boards would do their full duty, it would eliminate unworthy colleges, and raise the standard of veterinary education generally. We would suggest that the State Superintendent of Public Instruction might be authorized to see that no educationally or morally disqualified person be allowed to matriculate for the study of veterinary medicine."

The Association adjourned to meet the first Monday in January, 1905.

M. J. WOODLIFFE, *Secretary*.

NEWS AND ITEMS.

"If the dog's prayer were heard, there would be a shower of bones from heaven."

"ALLOW me to tender my congratulations for the continued steady improvement the REVIEW is making."—(*G. R. Young, D. V. S., Omaha, Neb.*)

"SCABIES IN SHEEP AND CATTLE AND MANGE IN HORSES," is the title of Bulletin No. 61 of the North Dakota Experiment Station, and is a scientific exposition of the subjects by L. Van Es, M. D., V. S., Station Veterinarian.

A SHETLAND PONY COLT, weighing twelve pounds at twelve hours old, is shown with its dam in an illustration in the *Breeder's Gazette*, of June 15. He was bred in Illinois, and appears healthy and strong.

MANGE has again been discovered among Kansas cattle in all of the counties west of the east line of Hodgeman and Ness Counties, except in Trego and Graham. A strict quarantine has been ordered. No cattle can be moved from one pasture to another in the district until they have been dipped in some mixture authorized by the State Sanitary Commission.

BOSTON'S WORK HORSE PARADE was a success from every point of view. More horses were in line than ever were driven in Boston since the parade was inaugurated and the institution of the prizes for long service proved the main feature of the whole affair. The good effect of the parade on the care and condition of Boston's horses was very apparent.

A PROLIFIC COW.—Mr. James A. Pennell, Macgregor, Canada, writes to the *Farmers' Advocate*, of Winnipeg, Manitoba, as follows: "I have a cow, not eight years old until July. She has given me twelve calves. When she was two years old, she gave me one; the three following years, she gave me twins; the year following, she gave me triplets, and now, again this year, she has given me twins, which makes in all twelve calves in five years."

GERMANY TO INVESTIGATE AMERICAN HORSE-BREEDING.—Cable messages indicate that the German Emperor has decided that a special expert on horse breeding, Dr. Grabensee, will go to St. Louis for the German Government to make himself thoroughly acquainted with the breeding of horses in the United States. Dr. Grabensee will go direct to St. Louis to spend a couple of weeks, and will then start on an extended trip throughout the United States.

BEAUMONT CRUDE OIL was recently used with success in killing Texas fever ticks on cattle dipped in it at Fort Worth, Tex. Officials in charge of the experiment state that after one dipping in the crude oil, which contains no petroleum and is not injurious to the cattle, they were unable to find any ticks on the animals after the sixth or seventh day. The process is inexpensive and if subsequent experiments prove it a success, it will be of great importance to the cattle industry in the Southwest.—(*Breeder's Gazette*.)

KOCH'S WORK IN SOUTH AFRICA.—Prof. Koch, according to a cablegram from Berlin, has discovered a new serum for the prevention of the cattle, mule and horse epidemics which have been killing animals in the South African herds. It is stated that the Government of Rhodesia paid Prof. Koch \$150,000 for his services. Koch has discovered also that the African rinderpest is radically different from the American Texas fever, the belief having previously existed that the former was imported from America by cattle from the South.

A "GENERAL-PURPOSE" COW.—The following from the New York *Tribune* shows that the special-purpose cow has been again outclassed in a "public" test. "John Sutphin, a Franklin Park (N. J.) farmer, asked the police to help him find a pet heifer which had strayed away from his farm. He declared she was a great fish catcher, and frequently would go to ponds on the farm, stand motionless for a time in the water near the bank, then suddenly thrust her head in the water and bring up a small fish in her mouth. On the advice of the police and with their aid, the shores of the Raritan river were searched. The heifer was found watching for fish near the landing bridge."

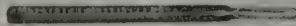
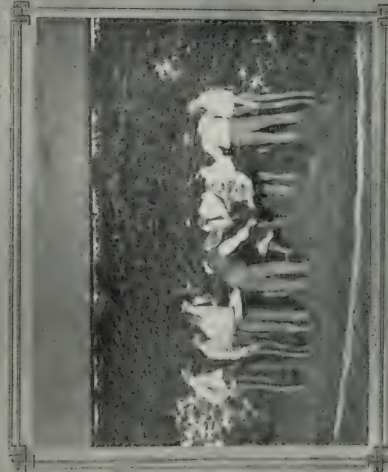
SURRA TRYPANOSOME.—Novy, McNeal, and Hare reach the following conclusions: (1) The trypanosome present in the Philippine surra can be cultivated artificially. (2) Attenuated cultures of this organism can be obtained as in the case of *Tr. brucei*. (3) This trypanosome is differentiated by its cultural characteristics from *Tr. lewisi* and from *Tr. brucei*. (4) The Philippine surra is, therefore, a distinct disease, different from nagana, and this observation confirms the work of Laveran and Mesnil on the non-identity of nagana and the surra of Mauritius. (5) The morphological differences between the Mauritian and Philippine trypanosomes suggest the probability that these organisms are distinct species, and hence that the term surra covers a group of closely allied diseases.—(*Journal of the American Medical Association*, May 28.)

TEXAS FEVER

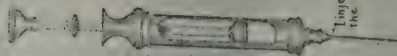
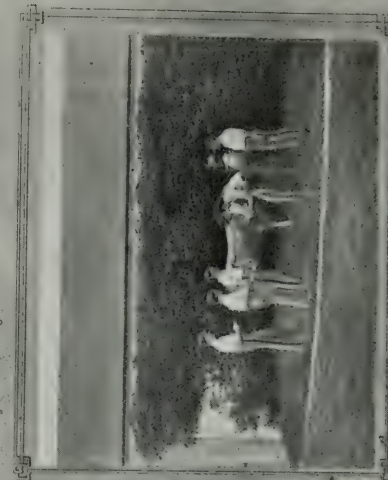
LA. STATE
UNIVERSITY

EXPERIMENT
'STATION.

Northern Male Trio: Let's away to the Sunny South and get immunized.

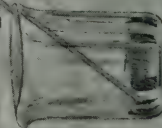


"I take
the temperature."

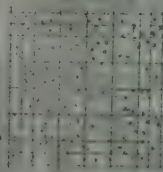


"Inject
the blood."

"I am being immunized."



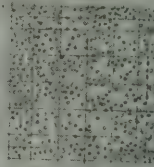
"Collect and defibrinate
the blood."



Red cells in Texas fever blood



"I transmit the germ."



Red cells in normal blood



"I am it! (prophylaxis bigemina)
the germ of Texas fever!"

IMMUNIZATION.

W. B. Smith

AMERICAN VETERINARY REVIEW.

EDITORIAL.

THE MODERN CHRONIC DISEASES.

PARIS, FRANCE, JUNE 15, 1901.

"THE MODERN TREATMENT" OF GLANDERS.—I have just

The accompanying cut is from the photo of a chart (24 x 22 inches), prepared by Dr. W. H. Dalrymple, of the Louisiana State University and Experiment Station, for the Louisiana Exhibit at St. Louis, and tells the story of Texas Fever immunization by illustration.

any attention. The conception and arrangement are Dr. Dalrymple's; the artistic work, which is almost completely pen and ink, with the exception of the photos in the centre, was executed by Cadet V. E. Smith, of the Mechanical Course of the Louisiana State University.

non-reaction following vaccination. If the world, as we would recommend as treatment, is a process which to this day has been used, I have, only as a means of disinfection, recommendation of malice. I thoroughly demonstrated. Dr. S. has certainly taken and, like Dr. Ruthven, has demonstrated the results of his work, and that certainly of this No. 1 will disappear. I will discontinue.

THE HISTORY OF THE CITY OF LONDON
FROM THE FOUNDATION OF THE CITY
TO THE PRESENT TIME
BY JOHN STOW
1618

AMERICAN VETERINARY REVIEW.

AUGUST, 1904.

EDITORIAL.

EUROPEAN CHRONICLES.

PARIS, FRANCE, June 15, 1904.

"THE NOCARD TREATMENT" OF GLANDERS.—I have just again looked over the REVIEW of last month and glanced at the "Army Veterinary Department", where the communication of my friend Dr. Schwarzkopf, headed "*Nocard Treatment*," attracted my attention.

"Nocard Treatment!" I am afraid that our poor dead friend would be rather surprised, for, while he advocated the repeated use of mallein in some special observations of glanders, where a non-reaction following would indicate recovery, I doubt if he would recommend as treatment, in the true sense of the word, a process which to this day is and ought to be considered, I believe, only as a means of diagnosis—leaving for a later date the recommendation of malleination as a therapeutic agent to be more thoroughly demonstrated. Be all these facts as they may, Dr. O. S. has certainly taken good advantage of the Nocard discovery, and, like Dr. Rutherford and others, has done well in making known the results he has obtained. I hope more will be published, and that certainly we will hear from others who will approve of this Nocard treatment, and no doubt also from others, who will disapprove of it or find fault with and advise it to be ignored.

* * *

BABÉS' CONCLUSIONS UPON MALLEINATION.—This reminds

me of an extract which I read a short time ago in the *Progrès Vétérinaire* as being a review of a work by Prof. V. Babés, of Bucharest, on the proper means to fight glanders in horses. It would take too much room in this chronicle to relate all the points treated by Prof. Babés, who seems in many of them to find fault with Nocard and with the conclusions he came to in his investigations with mallein. I will only resume the conclusions of his work, leaving to those who have opportunities to use mallein to test their value, confirm or disprove them, and, above all, draw from them whatever good points there are in them. The name of Prof. Babés, the numerous works which science owes to him, are sufficient evidences of the value of his remarks and of the weight they must bear in a question of this kind.

The conclusions are as follows :

(1.) The preparations known as mallein, morvine, prepared according to the methods used for tuberculin, give rise in glandered horses to a specific reaction.

(2.) This reaction is manifested in a characteristic manner when the injection is renewed after 8-14 days.

(3.) The want of appearance of the reaction does not mean recovery, as it often reappears *de novo* ; but in all cases, it indicates a tendency to recovery, tendency which can be accelerated by systematic injections of mallein, in doses increased progressively.

(4.) Feverish or worn-out horses, although glandered, react only rarely.

(5.) Generally the nodules found at post-mortem have their origin in the bacilli which enter the bronchii through the respiratory tract. Primitive intestinal lesions are much more rare, and thus are localized to the glands and organs surrounding.

(6.) The presence of nodules of other origin are frequent in healthy animals.

* * *

The conclusions 7 and 8 resume the following plan as the best as prophylactics :—

(a) Slaughtering of animals with manifest glanders (that is, which have had typical reaction once or twice and had suspicious symptoms); (b) those which have presented only a reaction shall be isolated in a thoroughly disinfected stable; they may be allowed work, but require watching; (c) those which have stopped reacting, or have given an atypical reaction, shall be left loose, but be submitted to systematic malleination with increased doses for one month; after two months they will be submitted again to normal malleination, and if they react they shall be killed or submitted again to the same treatment providing they have no apparent lesions or if their high value should justify another attempt.

For Babés the recovery cannot be obtained except after months or even after years, when the animals have been treated by repeated increased doses of mallein. After all, it is pretty well as Nocard has said, and yet I am not sure if he was as positive and considered mallein as more than an adjunct to good hygienic measures, air, food, etc.

* * *

THE PROPOSED REMOVAL OF THE "NEW" VETERINARY COLLEGE TO LIVERPOOL.—In my last chronicle I related what I considered a very surprising piece of news—the moving of the old "New Veterinary College" of Edinburg to Liverpool. At that time I thought that, although the thing was not concluded, it was as good as done. But if we read in the comments of the *Veterinary Record* and also the discussion that took place at one of the meetings of the Council of the Royal College of Veterinary Surgeons, it seems that, after all, if Prof. Williams succeeds it will not be without having fought hard for it. Indeed, it seems that to move to Liverpool a kind of authorization must be obtained from the Home Secretary. This gentleman has asked the Council what they thought of it, and the Council, by a vote of 16 to 3, "expressed their disapproval of the proposal to establish a second veterinary college in England and to have it affiliated with the Royal College of Veterinary Surgeons." And there, as I write, the question rests. It was thought first that

the veterinary college would be directly a branch of the University; instead of that it turns out that it is to be affiliated with the Institute of Comparative Pathology, which is a kind of adjunct to the University. And, again, the veterinary practitioners of Liverpool seem to exhibit but little enthusiasm for the importation of the college. Some do not object to it, a few promise to help it by the sending of patients for clinical material, and, again, a great number are unanimously against the project. A petition has been sent to the Royal College of Veterinary Surgeons in which it has asked that if the school is allowed to come to Liverpool, the professors shall not be allowed private outside practice.

Among the principal promoters of the moving is Prof. Boyce, a man of considerable influence, but, unfortunately for him and Prof. Williams, the opposition counts men of great value and whose opinions and pleasure will have great weight, and, after Prof. Williams, President of the Council, had acknowledged that the scheme was yet a nebulous one, men like Prof. McFadyean, Dollard, and others had no difficulty in obtaining the vote of disapproval sent to the Home Secretary.

* * *

STRINGENT RULES AGAINST THE IMPORTATION OF RABIES INTO ENGLAND.—For some little time past lovers of dogs have had a hard time in England. The fear of rabies, which, after prevailing rather extensively and had been stamped out by the enactment of severe measures, rigidly enforced, has not entirely subsided, notwithstanding the difficulties put in the way and the possible danger of an importation from the Continent or from America, has decided the Board of Agriculture to take greater precautions. If I am well informed, after the end of May, all canines which will visit England will be obliged to wear a special harness given by official veterinarians, I suppose, after a thorough medical investigation.

According to the new rule, this harness shall be worn for a period of six months from the time the dog has put his paws on English soil. The new scheme will not, of course, prevent a

dog from developing rabies, but it will certainly be the means of locating that dog. Notwithstanding the good work done by the Board to rid England of rabies, there had been so much smuggling done with dogs of late that there was a great chance that the disease might be imported and spread again. The harness that dogs will have to wear are made something in the shape of those adopted for pug dogs. A plate on the saddle will bear the words "Board of Agriculture and Fisheries. In Quarantine for Rabies. T. D. No. — ." The new rule is not welcome to all, especially to those who own small pet animals, toy spaniels, and so forth, and, yet, there is no doubt that much good is expected to be derived from it. By the last sanitary returns that I have just seen, England has been free from rabies since 1903. The last recorded were in 1902, when 9 dogs are mentioned in the bulletin. The Board of Agriculture is certainly well justified in taking the proper measures to guard against a reimportation through dogs.

* * *

THE MUTUAL BENEVOLENT ASSOCIATION.—Of course, when this chronicle will reach our readers, they will be all busy in arranging things for the 16th of August for the great meeting of the National Association, and perhaps few will take time to read their August REVIEW, except those who will have to travel a long journey to reach St. Louis. But, anyhow, it seems that I ought not to miss my chance of saying one word more in behalf of the projected Mutual Benevolent Association.

In some preceding chronicle I remarked how erroneous it was to prognosticate the failure of such association from want of financial resources. Lately I took the opportunity to show how a similar organization in Paris had succeeded by good management, proper support from the members, and by private donation, to realize a large sum as a permanent fund. I have just received the information that the same association has just inherited a gift amounting to the respectable figure of 300,000 francs, say \$60,000, given by a charitable lady at her death. What amount of good this association can now do. Is it im-

proper to believe that similar generosity will not be found in the States? I do not believe it; and, as I have said before, I will repeat: Veterinarians cannot afford to refuse to unite when the object of the union is to benefit their sick *confrères*, or in case of death to assist their families. I hope the St. Louis meeting will not close without starting the organization of such an association.

* * *

LITERATURE RECEIVED.—A little bibliography to finish. I acknowledge the receipt of:

(1.) The Proceedings of the A. V. M. A. meeting of 1903. It is probably well known to all our readers, members of the Association. Those who are not in possession of it will do well to get it, if they can, as it contains lots of interesting facts.

(2.) The Fourth Semi-annual Report of the Chief of the Cattle Bureau of the Massachusetts State Board of Agriculture, where a complete history of the outbreak of foot-and-mouth disease is minutely given.

(3.) From the Bureau of Animal Industry, the first part of the experiments concerning tuberculosis, viz., the virulency of human and bovine tubercle bacilli for guinea-pigs and rabbits, by Dr. Marion Dorset; and, again, a circular relating to immunization from hog cholera.

(4.) Finally, I have the address, "Agriculture in the Common Schools," by Dr. W. H. Dalrymple, and, also, by Dr. L. Van Es, his report on Scabies in Sheep and Cattle and Mange in Horses.

A. L.

THE LAST WORD BEFORE ST. LOUIS.

When REVIEW subscribers open the wrapper of this issue, grips will be packing preparatory to embarking for the convention city of 1904. Incidentally, it will be well to reopen the grip and place this number in a convenient place to be secured when the train starts. It is filled from cover to cover with material of great interest and value to every veterinarian who loves his work and strives to make himself better to labor in his

chosen field. There will be found in the regular department full details of the splendid programme of the St. Louis convention, which has been prepared at great pains by Secretary Repp, who has labored unceasingly ever since adjournment at Ottawa to make the approaching meeting excel in every sense all previous gatherings of the American Veterinary Medical Association. It is not probable that, outside of those who have been initiated, many appreciate the amount of hard work and anxiety connected with the official direction of the affairs of so large an association as the A. V. M. A., and the REVIEW is more than ever able to appreciate the energy, discretion, and loyalty demanded of the Secretary's office. Dr. Repp is peculiarly well adapted to the work of this office, possessing the essential cardinal virtues in full proportion, with special tendencies toward the systematic conduct of such matters, largely upon which depend the smooth and frictionless working of its affairs. The Association has been especially fortunate in the selection of its Secretaries, and the present incumbent has nothing to fear by comparison with his distinguished predecessors.

Scarcely less onerous are the duties of the local Committee of Arrangements, particularly its Chairman, who not only has strenuous work to perform in perfecting arrangements for the meeting, but the conciliation of various personal peculiarities among local practitioners often calls for a display of diplomacy and judgment. In the present instance, Dr. Chester Miller has been forced to devote a great deal of his time for a number of months toward the demands of his position. First, he had to select his committee, and then organize it with an eye toward securing its greatest efficiency; funds to defray necessary expenses had to be raised by voluntary subscription; a hall with the best acoustic properties must be found; a clinic amphitheatre engaged, operations decided upon, the material secured, and operators obtained; the hotel headquarters must have many advantages of location and accommodation, with banquetting facilities; and then the reception of members and guests, the entertainment of visiting ladies, and a hundred minor details

in which he minutely describes the technique of the operation. The tube used at the New Jersey clinic was that perfected by Dr. Phillips, and it seemed as though it were perfect for the purpose.

The Connecticut Veterinary Medical Association, which meets in Waterbury on the 2d inst., will include the passing of the stomach tube among a number of other surgical demonstrations.

WE are pleased to announce that Dr. D. Arthur Hughes, of the Bureau of Animal Industry, of East St. Louis, Ill., one of the REVIEW's valued collaborators, is preparing for an early issue an account of the exhibits of the Bureau of Animal Industry and the Agricultural Colleges at the World's Fair.

ACCORDING to statistics collected by the Government there were 47,009,367 hogs in the United States on Jan. 1 last with an average farm valuation of \$6.15 per head. Iowa leads in the total number of hogs held at that time and in the total value, the figures showing 7,364,268 head, valued at more than \$47,000,000.

PROFS. A. H. BAKER AND JOSEPH HUGHES, of Chicago, have arranged to run a special train from Chicago to the St. Louis meeting of the A. V. M. A., over the Chicago and Alton Railroad, leaving Chicago at 11.40 P.M. on Monday, Aug. 15, arriving at St. Louis at 8.10 Tuesday morning, the opening day of the convention. All veterinarians passing through Chicago for the convention are cordially invited to join the party.

THE BUREAU OF ANIMAL INDUSTRY of the United States Department of Agriculture employs about 1,500 men, all under civil service regulations, and maintains offices with inspectors at every packing centre in America. For example, at St. Joseph, Mo., the Bureau has 19 inspectors, one clerk, 5 stock examiners and 22 taggers. It is the duty of these officials to see that no carcass of meat or food product coming from any diseased animal is sent out from the packing plants; that disease germs brought to the stock yards by infected animals of any sort are destroyed as far as possible, and that all cars which convey infected stock to the yards are thoroughly fumigated before being sent out.—(*Breeder's Gazette*.)

ORIGINAL ARTICLES.

THE CURE AND PREVENTION OF BOVINE TUBERCULOSIS—SUBCUTANEOUS INJECTIONS OF OIL.

BY THOS. BASSETT KEYES, M. D., OF CHICAGO.

Chairman of the First Organization Committee of the American Congress of Tuberculosis, and one of the Vice-Presidents of the International Congress of Tuberculosis, St. Louis, 1904.

In a recent number of the *Pacific Medical Journal* I described my treatment of tuberculosis in man, consisting in subcutaneous injections of oil. Previous to this the lay press had given an outline of the treatment, so that a great deal of attention has been attracted to this mode of treatment, and many physicians with whom I am in correspondence report excellent results. These experiments have now been carried on for a sufficient time to say that by its means tuberculosis can be cured.

THE CURE OF CONSUMPTION BY FEEDING THE PATIENT WITH
SUBCUTANEOUS INJECTIONS OF OIL AND ITS DIGES-
TION BY THE WHITE GLOBULES OF THE BLOOD.

In the article referred to I said: By the method of treatment which I am about to describe in this paper I believe that consumption can be absolutely cured. First, however, before entering into the merits of this treatment, let us briefly consider the disease.

Tuberculosis is a disease of mal-nutrition, and while the presence of the germ confirms the diagnosis, before the germ can grow it must find a suitable soil, there must exist a pretubercular condition. It is estimated that we all breathe in a great many of these germs, but that they cannot grow in healthy, well-nourished individuals. People who have consumption do not eat fats, oils, and cream in sufficient quantities. The first requisite in an attempt to cure tuberculosis has been for many years to give the patient oils of various kinds, and the most successful sanitariums of late years have adopted a process of food forcing, using the fats of meats, butter, and cream as the principal foods to be relied upon to effect a cure, each article of diet

being selected for its fat-producing and strength-giving properties. To this a vigorous out-of-door life has been advocated, because why? It promotes appetite and the outdoor life is conducive to place the body in condition for the absorption of more fats. I was one of the first to advocate tent life for the treatment of tuberculosis in two articles entitled "Camp and Out-door Life as an Aid to the Permanent Cure of Tuberculosis," Feb. 21, 1900, and "Some Results of Camp and Out-door Life in Northern Wisconsin", Congress of Tuberculosis, May 15-16, 1900, and some four years ago I located an out-of-door camp for the treatment of these invalids in Northern Wisconsin.

To maintain nutrition has long been considered the prime requisite of cure, and an increase of weight is an indication that nutrition is overcoming the disease, and as weight increases there comes strength, and the passing away of the other distressing symptoms, such as the products of the disease, expectoration of mucus, fever, and finally cough. Prof. Osler has stated that the arrest and cure of the disease is entirely a matter of nutrition, and that the whole object of treatment is to so fortify the patient's constitution against the inroads of the disease, so that the individual cells of the body have the stamina to fight against and destroy the tubercle bacillus. Regarding tuberculosis, Dr. J. H. Elliot (*Canadian Journal of Medicine and Surgery*, March, 1903), says that nutrition is dependent upon the proper assimilation of food, while improvement must be proportionate to the increase in the amount assimilated. All therapeutic measures, says Marfan, should be devoted to the end of nutrition, and the earlier such measures are instituted the greater the prospect of cure. Without going further into the fact that the whole cure of tuberculosis up to the present time is dependent upon our ability to nourish the patient, except to say that the methods of Dettweiler, von Leyden, and Hoffman, of Germany, depend upon results from nutrition, and to this end they have advocated forced diet regardless of appetite. If the patient was to recover he must eat. Out-of-door life was important, inasmuch as it supplies to some extent the appetite.

Anorexy is one of the worst symptoms against the cure of tuberculosis. It is impossible to get the average patient to eat enough fats, and a person who has consumption is the one who leaves the fat from his meat, eats very little butter, and little of cream and milk. When a patient is far advanced in the disease, he is unable on account of this loss of appetite and nausea, to eat sufficient food to maintain nutrition, and therefore gradually declines as the disease advances.

In the above few words I tried to convey the importance of nutrition, in the cure of this disease, believing that the cure rests entirely upon our ability to so nourish the system and stimulate the cells of the body that they will throw off the disease.

THE DIGESTIVE POWER OF THE WHITE BLOOD CELLS.

Experiments have been conducted, principally by the Italian physicians, and a few others, viz.: Gabrelschevski (*Arch. f. Exp. Path.*, 1891, bd. 28), Czerny (*Arch. f. Exp. Path.*, 1893, bd. 31), Levierato (*Arch. Italiano di Clinica Medica*, n. 3, 1893), Tarchettia e Parodi (*La Clinica Medica Italiana*, n. 10, 1899), Kraminer (*Berl. Klin. Woch.*, n. 6, 1890), Oliva (*Gazzetta degli Ospedali*, 17 giugno, 1900), Tarchetti C. Sull, esistenza di un fermento diastase nei corpuscoli bianche (*Gazzetta degli Ospedali*, n. 90, 1900), Sull natura e sul significato della sostanza iodofila dei globuli bianchi (*La Clinica Medica Italiana*, n. 8, 1900), Di una pretesa degenerazion amilodea sperimentale (*La Clinica Medica Italiana*, n. 7, 1900), Richerche nulla degenerazione amiloidea spermintale (*La Clinica Medica Italiana*, n. 11, 1902), Porcile V. Sul valore semeiologico della reactione iodofilia nei purulenti (*Gazzetta degli Ospedali*, Milano, n. 102, 1900), which go to show that there is a glicogenic ferment in the cells which has the power to digest starches. These experiments have been carried on principally to discover a cause for the disease of diabetes. It has been shown more or less perfect by some of these same observers that fats also may be digested by the blood, and that the white blood cells have the power of digesting oils, though these experiments, accord-

ing to Tarchetti (*Clinica Medica Italiana*, 1900), are not definite, it is clear that the white cells of the blood possess a ferment or property which has the power of digesting fats and starches, and without going into the process, chemical, phagocytic, osmotic, etc., which has been gone into by Dr. Spezia in the numbers 5 and 6 of the *Gazzetta Medica Lombarda*, 1904, for, as Tarchetti (*Gazzetta degli Ospedali*, n. 28, 1904), says: "Is it possible to follow the rapid course of the oil injected into the internal organism and the phenomena positively chemical, of osmosis, of phagocytosis and of digestion intercellular?"

Upon the digestion of oils by the blood I base this claim for a cure of tuberculosis. So far I have tried to show: 1st, that the cure of consumption must necessarily depend upon a proper supply of nutriment, the disease being primarily a disease of mal-nutrition; 2d, that consumptives suffer so much from loss of appetite, nausea, and perhaps non-absorption that as a rule they are unable to take sufficient amounts of fats to overcome the disease; 3d, that the blood cells possess a ferment capable of digesting fats.

I shall now give my results in the cure of tuberculosis by the subcutaneous injection of oil. The oil which I have selected in the treatment of my cases has been olive oil of a very high grade, thoroughly sterilized, using olive oil in preference to other oils on account of it being non-irritating and very readily accepted by the system. The point selected for the injection has been over the shoulder blades, injecting one day over one shoulder, and the next day over the other, excepting when a large amount of oil is used, when it is necessary to inject over both. There is very little pain connected with the injection and the following day it is hardly possible to find where the injection was made. By being careful in my technique of cleanliness and sterilization, so far no infection has taken place and consequently no soreness, though I believe the non-irritating properties of the oil has a great deal to do with this. The amount of oil used varies. I commence by injecting 12 c.c. of oil each day and the third day increase the amount to 24 c.c.

of oil. If no unpleasant symptoms arise I keep gradually increasing the dose to full tolerance of the patient, which varies with the individual and the stage of the disease. Those who are poorly nourished will sometimes assimilate large quantities of oil up to about 40 c.c. daily. In this manner I have treated nine consecutive cases successfully, and within 24 hours after each treatment there is a remarkable benefit and amelioration of all symptoms, such as diminished morning cough, night sweats, increased strength, and finally gain in weight. Some of the very worst cases of tuberculosis under this plan of treatment have gained each day, and I believe have been thoroughly cured. The syringe which I use is an asperating syringe, reversing the piston with a thumb screw, it requiring considerable pressure to force the oil under the skin.

By injecting oil thus it is absorbed and assimilated by the blood cells and there is a great increase in their numbers. Thus all of the indications for the cure of tuberculosis are met. It overcomes the disease through increased phagocytosis and thus the active cells destroy the disease. Nutrition is reëstablished. The time required to overcome all symptoms is remarkably short and one will be greatly surprised at the benefits which come with treatment. Physicians should use great care in the amount of oil given, for very large doses if long continued might result in fatty degeneration of certain organs; but with the disease tuberculosis this is not so apt to occur, as tuberculosis and fatty degeneration are antagonistic. I have based the claims of this treatment as a cure for tuberculosis from my experience and clinical evidence and from my conviction. I give my results this early, believing that the cure of tuberculosis is solved and that by so doing many lives will be saved. Of course, to the above treatment should be added all that has been found useful in the treatment of tuberculosis, principally of which is a forced diet of articles selected for their nutrition, such as meats, fats, butter and cream, out-of-door life, and hygiene.

I hope and trust that physicians will at once take up this

method of cure, and I respectfully request that those doing so will communicate their results to me, as by broader knowledge much good may come, and it is my desire to report these results at the International Congress of Tuberculosis to be held in St. Louis of this year.

DO SUBCUTANEOUS INJECTIONS OF OIL CURE TUBERCULOSIS?
THE ANSWER. YES!

From the results which I have obtained in the cure of tuberculosis by the subcutaneous injections of oil, and from the reports which I am receiving from many physicians who are taking up the treatment, if the question were asked: Do subcutaneous injections of oil cure tuberculosis? we could answer, yes!

THE THERAPEUTICS OF THE METHOD.

The human organism infected at the lung with tubercle bacillus presents these lesions: First the infection is walled off and the tubercle is formed from which the disease took its name long before the germ was discovered, being so characteristic of this disease, though varying in appearance in graduations corresponding with the stage of the disease, the area infected, and its association with other germs from large or small pyogenic sacs and cavities.

OIL INCREASES CELL FORMATION.

Following the usual description that when an infection of the lung takes place that the powers of the body, the blood, hurry an increased number of cells, principally leucocytes, to the part, there is also with the cells a connective tissue formed, derived from the nutriment of the blood, in the endeavor of the body to heal itself. The subcutaneous injections of oil meet these conditions in a remarkable way, for they increase cell growth, particularly of the leucocytes, both in number and size, and this follows almost immediately after an injection. The second condition, that of aiding in the formation of connective tissue, is also met, and as shown in a previous paper, fats are consumed for the repair of tissue more than any other food, *i. e.*, they are converted into the various tissues as the old are worn

out; they are, according to this theory more essential to the healing of the diseased lung, to the replacing of old worn out tissue than any other material.

CONNECTIVE TISSUE WHICH HEALS AND FILLS LUNG CAVITIES
DERIVED FROM THE FAT OF THE BLOOD.

If we will stop for a moment and consider the development of fat tissue we will see its relation to other closely allied tissues and particularly to connective tissue, the tissue which fills and heals tubercular lung cavities. In the early stage of the growth of fat tissue most fat cells have the same appearance as the ordinary connective tissue cells, and I think you will bear me out in saying that it is not too far fetched to believe that the blood loaded with increased nourishment in the form of increased cell growth and fats, has a better chance to deposit these over-abundant cells and fats in the formation of connective tissue in the diseased lung, thus healing the affected area, the place where they would be more likely to be deposited, since nature always seeks to cure herself, and as adipose tissue yields to the demands of other tissues in all diseases. By injections of oil we thus aid nature to the material for healing the lung from which she is wanting.

THEORIES OF IMMUNITY.

Let us now consider some of the theories of immunity and later see how digestion of fats and injections of oil meet these theories, as they do in many particulars.

In all serumtherapy in which experiments have been vigorously carried on since Koch, in 1882, published his first article relative to his discovery of the germ, it has been decided that such serums, should such a one be discovered to prevent tuberculosis, will not act so as to destroy the germ directly, but in a secondary way by stimulating to increased energy the white corpuscles of the blood, or, as Buchner puts it, that perhaps in the white corpuscle the dense power of the blood (alexin) originates, while Metschnikoff believes their action may be due to increasing phagocytosis. How often the blood in a state of

health prevents the growth of disease germs in a similar way no one would be able to compute, but it is known that even germs of the most severe diseases may be found in the secretions without having excited the disease of which they are characteristic, and it is this power which in itself constitutes immunity.

The lateral chain theory of immunity formed by Ehrlich in 1897, has been looked upon as an hypothesis of great value in explaining natural and acquired immunity, it being based upon the specific value of toxins, a distinct toxin being formed for each substance eliminated from the body, being a bacteriolytic serum stimulated by the presence of one kind of germ or pathological substance, and being devoid of action upon another. Ehrlich also founds his lateral chain theory upon the mechanism by which the cells are nourished, this cellular protoplasm being very complex with many combining functions or "lateral chains" carried on by "receptors" of various forms, and according to its peculiar form is able to secure by attachment the substance called "haptophores," which it can use and for which it is said to be particularly adapted. The receptors formed for the purpose of taking up nutritious haptophores may also take up poisons and destructive haptophores as of pathological germs which have gained access into the system. Should this be the case, according to the hypothesis, the pathological germs may stop the nutrition of the cell and bring about its destruction. On the other hand, should the pathological substance not attach itself in a quantity sufficient to destroy the cell, it forms new receptors for taking up nutrition, in that its life may be maintained. Through repeated attacks of pathological substances (pathological haptophores) the cell in order to maintain itself grows new receptors, greatly in excess, which are finally liberated into the plasma and are capable of uniting with haptophores either pathological or nutritious, and being separated from the cell form products of immunity, and thus animals become immune from certain poisons and pathological conditions because their cells either lack the appropriate receptor or possess an unlimited number of them. This hypothesis is accepted as accounting for

natural and acquired immunity, study and observation showing that lowered vitality of the individual lowers the immunity. As pointed out by Prof. Welch, in his Huxley lecture, it was interesting to see that this theory propounded for the purpose of explaining immunity, like the other great theory of phagocytosis, has the mechanism of cellular nutrition as its basis.

HOW FATS ASSIMILATED FROM THE INTESTINE AND OILS
INJECTED SUBCUTANEOUSLY MEET THE GREAT THEORIES
OF IMMUNITY IN THE CURE OF TUBERCULOSIS.

When fat is taken into the intestine it is split up into oils and assimilated mechanically, entering the blood in an emulsified or solid form by absorption through the villi of the intestine, the white blood cells (like animals fed) being in readiness at the villi to absorb them, and being particularly abundant after a hearty meal. The process of assimilation of fats is not agreed by all observers, and therefore not exactly understood, but that it enters the blood in an emulsified or solid form, and under certain conditions is deposited directly in the tissues is assented to. With many tubercular patients the fat is not digested, but passes away with the stools, and therefore subcutaneous injections of oil should be made.

In subcutaneous injections of oil we use an oil which, because of its purity, needs no straining, and not being in the form of fat tissue needs no splitting into oil globules by the intestinal juices. The oil injected under the skin therefore, enters the blood in a way somewhat similar, as if it were strained through the villi of the intestine. Let us notice what happens when a subcutaneous injection of oil is given. First we observe a puffing up of the skin because of its being raised by the oil injected, this swelling corresponding exactly to the amount of oil injected. A rosy colored circle several inches in width at once takes place. This hyperæmia shows the blood at work, and in a period of about three hours 20 c.c. of oil will have entirely disappeared, leaving no trace of where it was injected. It has been absorbed and has gone to make new tissue and give nutriment to the blood.

An examination of the blood after a subcutaneous injection of oil shows an increased growth of its cellular constituents, both in number and size. This meets the theory of immunity as to phagocytosis; it also can be applied to the theory of immunity devised by Ehrlich, in that oils either assimilated from the intestine or from subcutaneous injection enter into the circulation. Now, on account of the increased amount of nutrition in the blood, the cells must develop more receptors to receive the nutrition or haptophores, and on this account receptors would be necessary to grow in excess, and thus be greater in number to combat pathological germs, and to supply nutrition.

The peculiarities of the body juices of the immunized animals and the formation in them or presence of antitoxins, amboceptors, and other antibodies, depend upon the separation of the unnecessary receptors from the excessively stimulated cells and experiments with the toxine antitoxine reaction, and the amboceptor reaction indicated that these separated receptors are able to continue their combining functions in fluids containing them. The complementary body or solvent of foreign and pathological cells is not accounted for in Ehrlich's theory, and of this we are left in doubt, but it is thought to be a property of the blood rather than a product of an antitoxine injected.

It has not been my intention to claim that oil subcutaneously injected is a true antitoxine against tuberculosis, but that it acts as such in part cannot be denied, and it meets the conditions in the theories of immunity in many ways. The digestion of fats and oils by the intestine shows why some people who live upon fats largely are naturally immune from many diseases, and particularly of tuberculosis. Clinically it is proven that when fats and oils can be digested by the tubercular patient, that they improve rapidly from the disease, and that subcutaneous injections of oil form the most valuable part of the plan of treating tuberculosis, since fats eaten may not be digested, but pass out in the stool, and oils injected under the skin must be digested.

PROOF WHICH THE BLOOD SHOWS AS TO ITS NEED OF OIL.

Proof as to the need of oil is shown by the blood of the tubercular patient. Examinations made of the blood of a great many tubercular patients was made a study by Dr. L. Applebaum, in the *Berl. Klin. Woch.*, of Jan., 1900. He divided them in groups corresponding to the stage of the disease. In the first stage of tuberculosis the blood changes are not typical. In the type of patient in whom tuberculosis is a matter of years of slow development—the tall, pale, thin, rapidly growing young subject, with poorly developed chest, anæmia is present in the first stage of tuberculosis; the erythrocytes are diminished in number, the hæmoglobin reduced, the specific gravity lessened, and coagulation delayed. In the class of individuals having good color and a liberal panniculus adipose, the blood is normal during the first stage of tuberculosis. In the first group the toxic effect of a long standing, but as yet not advanced tuberculosis, is apparent. In the second stage of tuberculosis the blood is apparently normal, estimated by the ordinary means for the determination of its character, but autopsies show that the organs of patients dying during the second stage of tuberculosis are very markedly anæmic. The fact is that there is a diminution in the blood mass, a loss of the watery elements which conceals the true state of affairs by presenting normal findings when the formed elements are counted or the hæmoglobin is tested. In the third stage of tuberculosis the anæmia is no longer concealed under the mask of oligemia. During this period hæmoglobin averages 40 to 45 per cent., erythrocytes 2 to $2\frac{1}{2}$ million, specific gravity 1040 to 1042. The leucocytes are increased and may number 15,000 to 20,000 at the end of life. In the hyperleucocytosis of the final stage, the polymorphonuclear leucocytes are relatively increased and constitute 85 per cent. of the total number of white blood cells. Without producing the various evidence which is furnished by different observers on the blood findings, let us analyze these conditions which call for nourishment, and particularly oil nourishment, since in subcutaneous alimentation, oil is the only product which to any appreciable

extent furnishes force to the body. In the group of cases referred to in the classified examinations of the blood we find that in the first stage, and those who have some fat, that before this adipose tissue is wasted it yields itself to keep up the normal constituents of the blood so far as possible, but in the second stage and as the disease progresses, there is no adipose tissue to supply the blood which then diminishes in quantity, and while nature endeavors to force her limited powers into armies of leucocytes with which to destroy the enemy, the disease, she has nothing to feed these defenders upon, the system is completely bankrupt, the adipose tissue has gone, and all nutriment of the body has yielded to the blood in endeavors to supply it with nutrition. The patient is lean, emaciated, and wasted. He cannot digest the food required, and nothing is to be derived from the system. Had subcutaneous injections of oil been instituted early in the disease, the nutriment which the blood requires for destroying the disease would have been furnished.

REASON WHY HORSES, HOGS, SHEEP, AND GOATS ARE SAID
TO BE QUITE IMMUNE FROM TUBERCULOSIS.

The reason why horses, hogs, sheep, and goats are quite immune from tuberculosis is on account of their good appetite, keeping them constantly eating, and their good assimilation, converting and storing in their bodies the fat tissues, from the most common foods. All that they do is to eat, eat all day when idle, eat all night when worked in the day. It is necessary for them to eat considerable bulk in order to obtain the required nutrition. The appetite of the goat is proverbial, and it is said to be immune against tuberculosis, so much so that it is almost impossible to inoculate the germ, and obtain symptoms of the disease.

That the assimilation of cattle is much greater as compared to man is noticeable to anyone from the remarkable improvement in flesh and healthy appearance when these cattle are fed upon grains containing oils, as linseed, and cottonseed, even when most of the oil has been expressed.

FEEDING OF OIL SHOULD CURE TUBERCULOSIS AMONG CATTLE, AND KEEP THEM FREE FROM THE DISEASE.

Since the assimilation of oils produces much more perceptible results in cattle than in man, in that they are quick to grow fat and slick when fed even upon small quantities of oil, and under these conditions if a cow were afflicted with tuberculosis, I have every reason to believe, that were she not milked, the fats which she would thus give would be stored in her own system, and then given oils in her feed, either linseed, cottonseed or sperm oil, that she would recover rapidly and in a very short time would not react to the tuberculin test, and if so she would be entirely well, and why not, since it has been variously estimated that from 80% to every human adult has tuberculosis sometime during their life, and that 50% recover, as shown by pathological post-mortem examinations.

Feed the cows more oily foods, combine with the feed of milk cows expressed oils of grains as linseed, or cottonseed, or any other oil, limit the milk giving period so that they will have a greater vacation in which to recuperate, and you will prevent tuberculosis among them. It must be remembered that there is a great drain upon them, and man should be more reasonable than to demand so much fat in the form of milk upon limited feed.

AGRICULTURE EXPERIMENTAL STATIONS SHOULD APPLY SUBCUTANEOUS INJECTIONS OF OIL IN CATTLE, SINCE IT CURES TUBERCULOSIS IN MAN.

In order to gain quick results in the cure of tuberculosis among cattle, we would expect, as with man, better results to follow the subcutaneous injection of oil, since it thus enters the blood probably in the same condition as it passes through the intestine, and is thus more rapidly put into use, and then none of it is lost through non-assimilation. Agriculture experimental stations should apply this form of treatment among tubercular cattle, since it proves a cure in man, and thus shed more light upon a disease which has so long been a scourge of civilization.

SOME FACTS AND WAYS OF PROVING THEM TO OUR PATRONS.

BY W. H. AUSTIN, D. V. M., NEWTON, IOWA.

A Paper read before the Iowa State Veterinary Medical Association, Jan. 27, 1904.

I might perhaps have found a more interesting subject to write upon than this, but it is a subject of very great importance to some of us, especially some of the younger practitioners, although I may not be able to enlighten them. Too much importance cannot be placed upon intelligent and thorough attention to methods and detail in our every-day practice.

It is but comparatively a few years since veterinary medicine was lifted from a basal position among the professions from the domain of rank empiricism to the honored and dignified position of a science. The responsible position held by the veterinarian is being more and more appreciated by the laity, and his services are recognized in the prevention of diseases and in safeguarding the public health. Thus the public learn to have more respect for the veterinarian and to appreciate the work which the veterinary profession is struggling so earnestly to accomplish.

All veterinarians approve of the plan of informing our patrons on all matters pertaining to veterinary medicine that can be presented in a way easily understood by them; especially is it well to frequently call the attention of stock-owners and stock-raisers to the sanitary and hygienic rules which should govern every stable and stock-barn.

We must strive to retain the confidence and support of the public by showing that we are in sympathy with them; encourage honesty of purpose, better business methods, manliness and self-respect. We should teach our clients the laws of health and the more liberal use of the veterinarian as a sanitarian, show them that certain diseases are transmitted by contagion and infection, and that such patients should be isolated; in short, teach them to obey the boards of health and other sanitary authorities. The two distinct professions of human and

veterinary medicine, as they appear to-day, originated and grew together for years, and yet how often do we read and find where the doctors of human medicine are at a loss to account for the presence of disease until some qualified veterinarian has been called to the same surroundings to treat some animal and discovers the germs of the disease which account for the sickness of both man and beast.

We must strive to retain the confidence and support of the public which lacks the knowledge of the fundamental principles of breeding, with the exception of that evidently gained from costly experience, and contribute our advice when the opportunity suggests itself. We should not neglect this first golden opportunity to make our demonstrations scientific in this direction. Those of us who have been located for some time in one community can see that scientific men generally are beginning to apply results through veterinary science.

How often is there a tendency among veterinarians to send out ill-shaped bottles with medicine, saying that such bottles are all right for a horse or a cow ; again, the powders or bottles wrapped in old newspapers and looking more like the product of some second-hand store than the packages sent out from the office of a professional man who has been taught that the germs of disease dwell in filth and decay. Neat and clean dispensing is just as important to the veterinary surgeon as it is to the merchant, and I feel convinced that there would be nothing like as much quibbling by our patrons when called upon to pay for medicine, if we would but consider that "cleanliness is next to Godliness," and think for a moment how far appearances go.

In November, 1903, I was attending a public sale in the central part of Iowa, where some sixty head of cattle were sold ; half or more of this herd were imported from Canada from the very best of breeding ; the owner was compelled to sell the entire herd on account of financial difficulty. Ten or twelve of this herd had actinomycosis or tuberculosis ; bunches from one to four were found on their necks, running in size from an egg to a man's fist ; this herd was affected also with contagious

abortion, which had been in the herd for four or five months, yet these cattle were very fat and sleek. I took great pains in talking with Iowa buyers and a large number of them shook their heads, but the buyers from Indiana and Southern States bought freely and paid well for what they got.

The hog-raisers are appealing to the veterinary profession more and more every year to stamp out that dreadful disease, hog cholera, which often in a few days sweeps as with a whirlwind, not only their hope of added wealth, but often the only means of retaining their homes. Instruct them in the ways of contagion and the spreading of disease; get them to read literature sent out by our experimental stations, showing them the facts; above all, guard them against the patent remedies agitated by agents travelling about the country trying to swindle them.

A few years ago a mutual insurance company was holding a trial to determine whether a horse had been killed by lightning or had died from some other cause. One of the leading officers of the company came to me and agreed to pay me well if I would assist the company in determining the cause of the death of the horse. The horse had been dead three weeks or more, and I examined what was left of the body; on examination I found nothing but bones and odor, but all of the bones were there; the humerus on the under side of the body was broken, showing that the insurance men had failed to make a thorough examination. This one point gained the case for the insurance company, and from that time I have done a good business for that company.

Another insurance company employed me to go and examine the body of a dead cow, which the owner tried to make appear had been killed by lightning. On looking over the surroundings and making a thorough examination I found nothing, but the vulva had been pretty badly mutilated; the owner claimed that the mutilation had been done by dogs since death. On post-mortem I found that the body was minus the womb and blood. The owner when thus cornered, owned that the

cow had had a calf and that the hogs had gotten at her and did the mutilation.

As each year goes on it is surprising to contemplate the number of cases I have been called to perform post-mortems upon. I take great pains to explain to all parties concerned the why and wherefore of every material point.

On one or two occasions I have called in other qualified veterinarians to demonstrate to the parties that I was right, and to assure them beyond question that there had been no mistake made in the diagnosis of the case.

In December, 1903, I was subpoenaed as a witness in a murder case to give expert testimony as to the burning of bones, the theory of the prosecution being that the party charged with the murder had set fire to the barn in which the murder was committed and burned the remains of the body after having severed all of the limbs from the body. After being sworn and placed on the witness stand, the State asked questions to show that I was a competent witness, having witnessed the burning of the bones of animals. The defense then objected to my testimony on the ground that my testimony was incompetent, I being a "horse doctor." I then asked the judge for permission to make an explanation, and suggested to the attorney for the defense that there was a vast difference between a "horse doctor" and a veterinary surgeon, which seemed to amuse the court and spectators greatly.

The legislature has in its wisdom given us laws whereby we can protect ourselves from the practicing of unqualified veterinarians in this State, and we should be vigilant in seeing that such laws are rigidly enforced, as a few practitioners of the stamp for which the laws were made can do more to lower the self-respect of the practice with our patrons than all of those who are well qualified can do in building it up.

A few months ago I was called to an adjoining town to administer to the wants of a valuable animal which had up to that time been treated by an empiric, who had given drugs in such a way that the animal was about to die. After a little explana-

tion to a few of the better class of horsemen, who could readily understand what had been done, an exciting time followed. The next day I was sent for again and asked to do my very best to save the animal. At that time I found that the empiric was doing considerable talking derogatory to my reputation as a veterinary surgeon and gloating over the schools which he claimed he was a graduate of. I sent for him to come and see me without fail, thinking that from reports of what he had said I could gain valuable information from the learned doctor, which he pretended to be. He came and I told him that he could either pay the owner of the animal \$25, the amount of the owner's expenses in caring for the animal, or I would have him arrested, charged with the illegal practice of veterinary medicine. In the course of two weeks the noble doctor paid the \$25 and quit the practice. Now this quack and his friends were one of the main causes of a graduated veterinarian leaving the locality in which he practiced.

I have in mind another case where a veterinarian who had attended schools here and there over the United States but had never graduated from any school of standing in the profession and who had failed to pass the required examination before the Board of Veterinary Medical Examiners, came to the town in which I live and hung out his shingle and entered into the actual practice of veterinary medicine. He commenced by running down the old men in that town, telling their patrons that they knew nothing of the practice or of the science of veterinary medicine. We prosecuted him under the law of the State relating to the illegal practice of veterinary medicine and had him fined in a justice's court \$25 and costs, from which decision he appealed to the district court and there attacked the constitutionality of the law, but was again defeated, the district judge holding that the law was constitutional. He then begged for mercy and the county attorney recommended that the fine be remitted and that the defendant pay the costs of the proceedings, and practice in an illegal way no more. From my experience in this line you can see that we can protect ourselves and

the profession from trespassing scavengers if we be vigilant and do our duty to our patrons and to the public at large. We want in the veterinary profession to-day men of honor, men of learning, men of common sense and judgment, men with ability and a disposition to do the ordinary routine practice methodically and well, men who will read the latest scientific methods and in their practice keep themselves up to the latest and most scientific and antiseptic methods. We want men who have the ability and knack to convert our professional skill into dollars and cents, as well as making it one of the honored callings and worthy the respect in the fullest extent of men.

I hope that from this paper someone in this presence will be able to get information that will lift the profession of veterinary medicine to a higher plane in the vicinity in which it is his good fortune to live and maintain the respect of his people.

THE TRANSVAAL VETERINARY MEDICAL ASSOCIATION held its first meeting March 19, at the Museum, Boom Street, Pretoria. The veterinarians of South Africa are very active and progressive, and are endeavoring to control the really very long list of contagious and infectious diseases which are devastating the animals of that country. - - - The Inter-Colonial Veterinary Conference was held at Bloemfontein, and then adjourned to Cape Town, in May. It was composed of veterinary and agricultural officials from the various States, and was a very earnest inquiry into the diseases which are most prevalent, with the especial object of recommending some definite campaign for their suppression or control. Among the veterinarians present were D. Hutcheon, Chief Colonial Veterinary Surgeon; S. Stockman, Principal Veterinary Surgeon for the Transvaal; Dr. Theiler, Bacteriologist; Lieutenant-Colonel Flintoff, Principal Veterinary Surgeon for Natal; C. E. Gray (formerly of Sheepshead Bay, N. Y.), Principal Veterinary Surgeon for Rhodesia, and a few others. The *Cape Times* devotes a very large space to the deliberations of this conference, giving the *verbatim* discussion upon "Coast Fever," "Red Water," "Tuberculosis," "Glanders," "Lung Sickness," "Epizootic Lymphangitis," "Mange," "Swine Fever," "Foot-and-Mouth Disease," "Anthrax," "Specific Ophthalmia," "Measles in Pigs," etc.

IMPOTENCE IN THE STALLION, WITH REPORT OF A CASE.

BY F. J. NEIMAN, V. S., MARSHALLTOWN, IOWA.

Read before the Iowa State Veterinary Medical Association, Jan. 27-28, 1904.

By the term "impotence" we designate the lack of power of the male to perform the sexual act, the causes of which are numerous and may be mentioned as follows: Brain and spinal cord diseases; in the various forms of anæmia with the resulting depression to the cerebro-spinal system, especially the centres of erection and ejaculation in the lumbar cord, the sexual function is more or less torpid. The supply of nerve force required for the essential vital functions, such as circulation, respiration, alimentation, is so much drawn upon that none is left for a function like that of copulation, which is only occasionally called into use, and, without detriment to the patient, can be absent for varying periods.

Many patients after suffering from influenza, pneumonia, rheumatism, gastric and gastro-intestinal disorders, are not infrequently found weak sexually. The question then suggests itself to one's mind, whether the underlying cause is the impaired health of the animal, or whether the toxæmic condition of those diseases is the essential cause. We not infrequently find patients which are said to be "worn out" sexually. Those patients may, or may not have been used to excess or in unnatural methods, but in the course of time, in spite of careful treatment, they lose desire and power of copulation.

Bromide of potassium has been claimed as a cause for sexual weakness and decay, but our knowledge of its action in that direction does not rest on a solid basis, although it is probable that sexual decline may follow the long and continued use of this drug, for it acts as a sedative to the sexual organs.

Large and continued doses of potassium iodide are said to cause atrophy of the testicles and so cause sexual impotence. Alcoholic stimulants at first stimulate sexual desire, but later cause a depressing effect on the nerves of generation.

In cases of exhaustion, over-work and anæmic diseases, the structure of the testes is much interfered with, and it is probable that the nerve impression conveyed to the body under those circumstances, in a greater or less degree, produce sexual stupor or impotence.

We have become so accustomed to look for causes of impotence in the sexual tract itself, that we pay little or no attention to the depressing effect of testicular trouble upon the central nervous system. The fact has been clearly shown that in some cases the removal of the testes is followed by mental depression and unbalancing of the nervous system as if a normal stimulant had been suddenly withdrawn. This fact then suggests itself to us that very probably in health and disease some impressions are conveyed from the testes to the central nervous system.

Then we have structural defects of the penis, causing impotence. In some cases penial erection is weak, and the introduction of the organ into the vagina is impossible, in others ejaculation takes place too early. We have injuries of the penis, such as kicks, blows, fracture of the penis, phymosis, paraphymosis, tumors of enormous size, destructive lesions of the skin, locomotor troubles, which render services impossible, such as painful arthritis, paraplegia and locomotor ataxia.

The treatment of the disease must vary with its cause. At the first indication of the disease, you should determine, if possible, what is the morbid factor, and then treat it on general medical principles. It is always proper to regulate the bowels. Weak subjects should have a good nutritious diet, while those of a plethoric condition should have a good cathartic and receive as much exercise as possible. We sometimes resort to aphrodisiacs, but I question whether or not they are of any service in a true case of impotence.

On March 28, 1901, I was called to see a fine four-year-old Shire stallion that the owner said was unable to get an erection of the penis, although he would protrude the organ every time a mare was presented and seemed as keen as any ordinary stal-

lion. On my arrival and upon examination I found the horse in fine condition, pulse and temperature normal, and in fact seemed in perfect health, aside from being able to copulate in a natural manner. History of the case revealed the fact that this horse had been used with a breeding bag the previous season, and had covered about one hundred mares, and impregnated about seventy during the season, which lasted from April 27th until Oct. 12th. Aside from the use of the breeding bag, I was unable to learn that the horse had been misused in any manner, as he was owned and handled by the same man the year before with the exception of two or three mares the latter part of the season, when he was handled by an attendant, who claimed he worked all right then. He then went into winter quarters, which was a nice roomy box-stall in a private barn. He was fed on timothy hay, corn and oats, and received very little outdoor exercise, until the next spring, just before the beginning of the season, and was supposed to be all right until he was led out to serve the first mare, with the above result.

Treatment consisted of removing horse from the stand, giving a good cathartic, after this he was given plenty of exercise, and put upon strychnine sulphate, gr. iss, two and three times daily, until he had twitching of the muscles. I then prescribed phosphorus 12 gr., ext. nux 1 gr., ext. damiana 24 gr., given in capsule three times a day. This treatment was continued, off and on, for about three weeks, without any change whatever. Treatment was then discontinued and the horse used the best they could the balance of the season.

He then changed hands, and so far as I have been able to learn he has never recovered.

DISCUSSION.—J. Miller and C. W. Stevens mentioned self-abuse as a frequent cause of impotence. W. H. Austin, S. H. Bauman, W. R. Fullarton reported some old horses that were foal-getters. S. H. Kingery reported the use of fl. ext. echinacea with very satisfactory results.

GOOD Investment for a Veterinarian: Trip to St. Louis, Aug. 15.

ULCERATION OF LIPS OF LAMBS.

SAINT PAUL, MINN., March 27, 1904.

Editors American Veterinary Review :

DEAR SIRs:—Under "Correspondence," and over the signature of N. S. Mayo, of Manhattan, Kansas, I note inquiry concerning ulceration of lips of lambs. October 12, 1894, through the kindness of Dr. H. J. D, we came into possession of the subject material (Mr. S 's letter and scab) for a joint thesis, which was submitted in due form to the Dean of the Veterinary College of the Ohio State University, June, 1895, where it remains on file over the signatures R. N. Mead and Frederick Priest.

Enclosed please find notes taken at the time of working on said thesis. Should you deem them worthy of publication you have my permission. Very truly, R. N. MEAD, D. V. M.

202 Pleasant Ave.

*
* * *

MR. S 'S LETTER.

MUSSELSHELL, MONTANA, Oct. 12, 1894.

H. J. D :

DEAR SIR:—I enclose a scab from sore mouth of a lamb. The lambs of this State get the sore mouth about November, the disease running its course in from a month to six weeks, and is fatal to many because of their enfeebled condition at the beginning of rigorous weather. As soon as the disease appears it is the rule to remove those infected to the yards and feed hay for about one month ; as during that time their lips are swollen so much that they cannot get their teeth to short grass.

The disease is contagious, if not infectious, as I have found in the past two years ; at one time my well lambs got in with the sick ones, accidentally, just as the latter had about recovered ; and at another time just as the disease was at its worst ; and in each case the well were infected.

Well sheep feeding at the trough where the sick have been

fed, no matter if freezing weather intervenes, are sure to be infected. What do you call this disease, and how can it be prevented? As a rule it is restricted to young sheep. We have tried greasing the lips with a mixture of one-fourth ounce of carbolic acid to a pound of grease, with considerable benefit. But generally they fall away in flesh, and must be kept in the hospital all winter. What do you think is the cause?

Respectfully yours,

(Signed) F. S.

* * *

The scab forwarded by Mr. S was of an irregular oval form of about five-eighths of an inch diameter, and an eighth of an inch in thickness; the upper surface being of a light gray or nearly white color, and the lower surface a dark brown. In the substance were many of the fine hairs of the lip, extending through and above the surface; the surface was also marked with many small fissures, radiating in an undulating manner from the centre to the circumference.

In order to study the disease we procured a number of healthy sheep for inoculation, and proceeded as follows:

SHEEP NO. I.

Oct. 18, 1894, we took a grade Merino ewe, four years of age, and weighing 95 lbs. After satisfying ourselves by careful physical examination that the animal was in sound health, we proceeded to inoculate by scarifying the skin at the apex of the lower lip, the corner of the mouth, and at a point opposite the centre of the external masseter muscle; also at a point on the inner surface of the hind leg. These lacerations were smeared over with a portion of the scab reduced to a pulp with water.

At the date of inoculation the temperature of the animal was 102.2° F. On the morning of Oct. 20, the temperature was 102.1° F., and in the evening 102.3° F. On the morning of the 21st, 102.8° F., and in the evening the same. At this date the points of inoculation were healed over, and no visible signs of

an infection were present. This led to the belief that we had taken a non-susceptible animal, and for a time we ceased to take temperature, or to observe closely. Oct. 31, while feeding the animal we noticed a dark spot at the apex of the lower lip, and examination revealed a reddish brown papula about the size of a grain of buckwheat; also, two papulæ near the commissure inoculation, one upon the lower and one on the upper lip. The cheek and leg inoculations were covered with a brown scab; no papulæ.

The morning of Nov. 1, the temperature was 102.6° F., and in the evening 103.2° F. At this date the animal had slight diarrhœa; apex papula much larger, commissure papulæ becoming ulcerous.

Nov. 2, the temperature was 104.2° F. in the morning, and 103.8° F. in the evening. At this date papulæ rapidly forming and becoming confluent, and animal refused food and water.

On the morning of Nov. 3, the temperature was 102.8° F., and in the evening 104.6° F. At this date the animal was stupid, lymphatic glands swollen, papulæ nearly all ulcerous, and scabs forming.

On the morning of Nov. 4, the temperature was 105.1° F., and in the evening 104.9° F. Papulæ now all advanced to the ulcerous stage, more or less confluent, and scabs being produced. No new papulæ forming.

On the morning of Nov. 5, temperature was 104.2° F. On the morning of the 6th it was 104.6° F., and in the evening 104.8° F. Morning of the 7th, temperature 103.2° F., in the evening 102.8° F. Scabs now becoming thickened and characteristic fissures appearing.

Morning of the 8th, temperature 102.6° F., and in the evening 102.1° F. Animal improving, eats well, swelling of glands disappearing, a rapid granulation beneath the scabs.

On the morning of the 9th, the temperature was 101.9° F., and on the morning of the 10th, 101.6° F. At this date we removed all scabs and placed in tubes as material for future inoculations.

On Nov. 13 all conditions were normal, the recovery being complete. There were no scars sufficient to indicate a loss of substance.

During the entire existence of the disease no trace of the morbid process extended into the mucous membrane or to the tougher skin, but remained localized to the soft skin of the muzzle.

SHEEP NO. 2.

Nov. 14 we placed sheep No. 1 in a clean pen in a new building, 200 feet distant from the one in which it had been confined. We now procured another sheep, which we will designate as sheep No. 2, and placed it in the pen with No. 1, with a view to proving the contagion. Sheep No. 2 being a grade Merino ewe, four years old, and sound. Temperatures taken as follows:

Nov. 15.	A. M.,	102.8° F.	P. M.,	102.3° F.
" 16.	"	102.2° F.	"	102.6° F.
" 17.	"	102.2° F.	"	102.2° F.
" 18.	"	102.3° F.	"	102.2° F.
" 19.	"	102.2° F.	"	102.3° F.

Nov. 19, five days after the sheep had been placed together, a papula about the size of a millet seed appeared upon the right lower lip of sheep No. 2, about one inch from the commissure of the mouth.

Nov. 20, A. M., temperature 102.2° F.; papula increasing in size, and second papula coming on the left side at about the same point. Temperature in the evening 102.3° F.

Nov. 21.	A. M., tem.	102.2° F.	P. M.,	102.3° F.
" 22.	"	102.3° F.	"	102.2° F.
" 23.	"	102.3° F.	"	102.2° F.

Nov. 23, the first papulæ have become ulcerous, and the whole muzzle covered with small papulæ.

Nov. 24.	A. M., tem.	102.2° F.	P. M.,	102.3° F.
" 25.	"	102.2° F.	"	102.2° F.
" 26.	"	102.° F.	"	102.1° F.

Nov. 26, nearly all of the papulæ have advanced to the ulcerous stage, and covered with the thick, characteristic scab.

Nov. 27. A. M., tem. 102.3° F. P. M., 102.2° F.

" 28. " " 102.6° F. " 102.1° F.

" 29. " " 101.4° F. " 102.0° F.

" 29, removed scabs; rapid granulation beneath.

" 30. A. M., tem. 102.2° F. P. M., 102.1° F.

Dec. 3, all ulcers have healed, no scars remaining. It will be noticed that the temperature did not reach any abnormal height, nor did it vary greatly. The animal ate with comparatively little inconvenience, and no symptoms of disease were observed other than the sore mouth, which was more extensive than on sheep No. 1. Lymphatic glands not swollen; no diarrhœa. The morbid process extended neither into the mucous membrane nor the tough skin, but remained localized to the soft skin of the muzzle.

SHEEP NO. 3.

On Nov. 15 we inoculated a yearling Merino wether at two points on the lower lip, the inoculating material being produced by inoculating nutrient gelatin in tubes with the scab from Montana, and using the fourth culture remote from the scab. This culture was a mixed one, containing one short bacillus with rounded ends, one large and one small coccus, and one fungus. Temperature of the animal 103.4° Fahrenheit.

Nov. 16. A. M., tem. 103.6° F. P. M., 104.0° F.

" 17. " " 103.6° F. " 103.3° F.

" 18. " " 103.3° F. " 103.4° F.

" 19. " " 103.3° F. " 103.4° F.

" 20. " " 103.2° F.

At this date, five days after inoculation, small papula was found on left lower lip at point of inoculation. The evening of the 20th the temperature was 103.3° F.

Nov. 21. A. M., tem. 103.2° F. P. M., 103.3° F.

" 22. " " 102.5° F. " 103.2° F.

" 23. " " 103.4° F. " 103.2° F.

" 24. " " 103.2° F. " 102.4° F.

At this date the papula had disappeared without ulceration; it had, however, exactly the appearance of those upon sheep Nos. 1 and 2.

Nov. 25. A. M., tem. 102.5° F. P. M., 102.6° F.

" 26 " " 102.3° F. " 103.0° F.

On Nov. 26 we inoculated this sheep at two points on the lower lip with a mixed culture of microorganisms which had been cultivated upon potato. On Dec. 10, fourteen days after this second inoculation, nothing had developed. On Dec. 22, we placed sheep No. 3 in the pen with Nos. 1 and 2, with a view of a further test of contagion. At the end of fifteen days there were no signs of infection, and deeming it possible that the inoculation with the remote culture, from which the small, non-ulcerating papula came, had produced immunity, we proceeded to test the question by inoculating sheep No. 3 with the scab from sheep No. 1. On Jan. 12, six days after the date of inoculation, papula appeared at point of inoculation.

Jan. 14, many papulæ present.

Jan. 15, the older papulæ becoming ulcerous, and lips considerably swollen.

Jan. 20, the morbid process has reached the height of development, the ulcers being covered with the thick, characteristic scab.

Jan. 31, sheep No. 3 fully recovered. The variation of temperature had been less than one degree; there had been no diarrhoea, no swelling of the glands. Was for a time a little indifferent about eating hay. As in the former experiments, the morbid process did not extend into the mucous membrane or into the tougher skin, but remained localized to the soft skin of the muzzle.

CONCLUSION AS TO CULTURE INOCULATION.

Although the papula produced by the culture inoculation did not course in the characteristic manner, it seems to have had sufficient effect to prevent contagion while the animal was penned up for fifteen days with sheep Nos. 1 and 2 in the infected pen. Still, there was not sufficient immunity to prevent

direct inoculation from producing the disease in its characteristic form, after the usual period of incubation, 5 to 6 days.

Having now reason to believe that the disease was caused by a specific microörganism, we continued our experiments for the purpose of identification.

March 12 we inoculated a young rabbit on the lower lip, using scab from sheep No. 1. Six days later, March 18, two small papulæ appeared at the point of inoculation. From day to day the morbid process progressed from papula formation to ulceration, then granulation and the characteristic scab. In this case, however, only the two papulæ appeared.

March 17 we inoculated rabbit No. 2, an old male, with scab from sheep No. 2. Six days later, March 23, papulæ appeared; morbid process progressed from day to day, spread to the upper lip, and the whole muzzle was covered with characteristic scabs. This rabbit ate well and exhibited no signs of disease other than the sore mouth.

April 9 inoculated rabbits Nos. 3 and 4 with scab from rabbit No. 1. Six days later, April 15, small papulæ appeared upon the upper and lower lips of these animals; progress of the disease as before. No signs of disease other than the sore mouth, nor did the morbid process extend to mucous membrane or tougher skin.

We inoculated nutrient gelatin in tubes with scab from Montana, and in 24 to 48 hours had a strong germ development, many varieties being present. The impure cultures grew more rapidly at the surface of the gelatin, but were present all along the puncture. They begin to liquefy the gelatin at the top, and proceed downward in funnel shape, the liquefied gelatin being turbid. In course of 2 to 3 weeks the whole mass of gelatin is liquefied; at the bottom of which lies a yellowish mass which is composed of bacteria and large and small cocci. From these cultures we made plate cultures, the fourth plate being necessary to separate them. In 24 to 48 hours we find two distinct growths, being superficial colonies which grow beneath the surface of the gelatin. One of the colonies grew

very rapidly, being at first white, later having a bluish halo about it. It is a pure colony of bacteria; short, thick, straight rods with rounded ends. The other colony did not grow so rapidly, and does not liquefy the gelatin. The colony at first appears as little dots; as they advance they show a yellowish coloration. This is a pure colony of medium size cocci, which appear singly or in twos.

Tube cultures from the Montana scab, and from those of the different sheep and rabbits, all have the same characteristic growth on the gelatin plate; the same microorganisms, bacilli and cocci, developing in every case.

We inoculated rabbits on the lip with the mixed cultures produced by the inoculation of the gelatin in tubes with scab, and in each case failed to produce any perceptible effect.

We also inoculated rabbits with each of the pure colonies, bacilli and cocci, grown on the gelatin plate, and these failed to produce the disease. From the result of these experiments we arrive at the conclusion that the microorganisms which we have grown on the gelatin are not the primal cause of the disease; although they no doubt play an important part in the morbid process.

On Nov. 11, 1894, we addressed a letter to Mr. S. . . . , of Montana, asking him to give us an idea of the conditions prevailing at the time of the outbreak of the disease; and on the 20th of that month we received the following reply:

"GENTLEMEN:—Yours of the 11th came duly to hand. I will help you all I can, but cannot promise prompt answers, as I am very busy, and twelve miles from the postoffice. This disease is prevalent all over the Musselshell valley, and I think all over the State. It is looked upon as one of the things that lambs must have, and not much is said about it. Sheep are herded in flocks of from one to four thousand, and this sore mouth comes mostly to lambs which have not been weaned, but the ewes allowed to wean them or not, as they please. The time varies because there is no set time to put sheep into their winter range, or dry camp, when they must eat snow, or be

driven several miles every third day to water. The disease has been attributed to salting them, thus freezing their mouths; but lambs raised at the house, which get salt every day, never get the disease unless brought into contact with lambs from the flock which have the sore mouth; and even then must eat with the diseased ones; if separated by a fence they are safe. But sooner or later, even when they are four years old, they are liable to take it. However, they never have it twice.

"As I have before remarked, the use of the applications of carbolic tallow, a half ounce of carbolic acid to a pound of tallow, swabbed upon their mouths three or four times, taking them off the range and feed hay until the swelling goes out of their lips, is about all the remedy employed; and the time taken is about one month. Fat lambs have few sores; their lips do not swell badly, and they are usually over it in a couple of weeks. Some of the leanest have it six weeks, and those which cannot eat hay and oats usually die. If you do nothing for them, leave them on the range in bad weather, there may be a loss of as much as 50 per cent. Our lambs this year are not in their winter range, and will not be before the 1st of Jan., as thus far we have had no snow. In consequence this batch of lambs may not have it at all, as they are about all weaned and will be turned back to the ewes on the 26th.

"My flocks are now drifting out of sight, so I will have to close and attend to my herding. Respectfully,

"(Signed) F. S. . . ."

* * *

MR. L 'S LETTER.

LACY, CHOTEAU CO., MONTANA, March 14, 1895.

GENTLEMEN:—Your letter of February 18th received in due time, and I am sorry that I could not give it more prompt attention, though I have little or nothing to write that can be of use to you. "Sore mouth" is the only name I have heard for the disease you refer to, though I have never known it to extend to the mouth proper. My opportunities for observing it have been limited, as we have had it among our sheep but twice, and then

only to a limited extent, affecting, so far as noticed, only those few which were in an unthrifty condition. Each time the disease disappeared without treatment, and without greater loss than might have occurred in its absence. The only measures we took were to change the sheep from feeding on the range to hay and water in the yards, with sometimes a little grain. Late fall or early winter is the season when the disease makes its appearance, and at that time we always have some unthrifty sheep to pick out of the main flocks and feed in the yards, as above mentioned. You are doubtless aware that most of our sheep graze on the open plains winter as well as summer. It is only weak and unthrifty sheep that are kept and fed in the yards, and these are termed "invalids, or hospital sheep." With regard to cause or prevention, I know nothing more than may be suggested by the above allusion to the condition of the sheep which were in our experience affected. The Hon. E. B, Helena, Montana, has had a more extended experience with the disease, and has been compelled to adopt treatment for it, which I believe has consisted of applications of a carbolic salve. It could do no harm to address him in regard to it, and it might elicit information of value to you.

Regretting that I am unable to contribute more extensive and more precise information, I remain,

Yours very respectfully,

(Signed) C. Y. L . . .

* * *

Judging from the letters of Messrs. S and L . . . this disease is largely a matter of proper care and attention on the part of flock masters. The season for the disease appears to be the late fall or early winter, and it seems, with little exception, to be restricted to unweaned lambs. If at the proper season for weaning, which should be before severe weather sets in, the lambs were removed to the yards until they were fully able to care for themselves; also, all unthrifty and weak animals should be culled from the flock and cared for; with this reasonable attention we are of the opinion that "sore mouth" would cut

but a small figure in the finances of the flock masters of Montana. We are satisfied that the disease is a purely contagious one, and restricted to a certain part, *i. e.*, the softer skin about the muzzle. It is characterized by the rising of papulæ, advancing to ulceration, incrustation, and, in a large majority of cases, to a rapid recovery. A fatal termination will be a very small per cent. if proper care is exercised.

TREATMENT.

In the majority of cases medical treatment will be of little value, as with reasonable care and attention the disease will run its course in from two to three weeks, and the general health of the animal be but little affected. If the animal is otherwise unhealthy, it would be well to assist nature with tonics, and anoint the sores with carbolic salve, or wash the muzzle with creolin, or some other good antiseptic and germicide; repeating the operation as the case may require. It is needless to say that no treatment would be practical unless the affected were separated from the flock and otherwise cared for.

I have diagnosed the disease on two occasions in the past four years, *i. e.*, since 1900. Very truly,

R. N. MEAD.

"ONE form of prose is a plain American mule drawing an imported automobile up a hill."—(*Poor Richard Junior's Philosophy.*)

A 1,400 POUND grade Clydesdale mare, owned by Stephen Goldsworthy, of Racine, Wisconsin, is reported to have given birth to twin mare mules, one of which is so much smaller than the other that it can walk under its big sister without touching her; its weight at two weeks old being only 40 pounds, and its head and ears were nearly as big at birth as all the rest of it.

A SHAFTLESS SULKY has actually been patented. In this device the seat is just above the back of the horse, and by an ingenious arrangement of supports and wheels, the horse will not have to bear any more weight on his back than he has to with the rig presently used. A corporation has been formed to place the invention on the market. The Kentucky horseman, George W. St. Clair, is credited with having made the shaftless sulky practical.

REPORTS OF CASES.

"Careful observation makes a skillful practitioner, but his skill dies with him. By recording his observations, he adds to the knowledge of his profession, and assists by his facts in building up the solid edifice of pathological science."

CYSTIC TUMORS OF THE PELVIC CAVITY.*

By C. C. LYFORD, V. S., Minneapolis, Minn.

I have met with several of these so-called tumors, apparently of the same variety, varying principally in location. The four that I have decided to report, have caused a good deal of concern to the owners of the animals, as well as consternation to the professional attendants. Hence I feel that they might be worthy the consideration of this Association.

No. 1.—During the fall of 1887, I was asked to examine a gray gelding, which the owner had recently purchased, as a driver, at which time he said showed every indication of being in good flesh, but as he thought somewhat out of condition from overwork, as the owner had admitted he sweated very easily. Within a short time, he seemed to lose all his courage, showed signs of effort in rising and would straddle with his hind legs when made to move. On rectal examination I found a cystic tumor containing fluid, extending from behind forward along the right side of rectum, some fourteen inches, the posterior portion being only about six inches inside the anal opening, and apparently directly above the rectum, to which it seemed to be attached. After purging the animal for two days, I decided to relieve by passing trocar through coats of the bowel into the sack. To the trocar a rubber tube was attached of sufficient length to pass well outside the body. The amount of fluid measured about forty ounces. Having washed the sack out with a solution of thymolic acid $\frac{1}{500}$, filling and emptying the sack several times, after which a solution of tincture of iodine, one part to twenty of water, was injected, retained for five minutes, then emptied out and trocar was withdrawn. I placed the patient in slings for fear his weakness might prevent him rising should he lie down. I kept him for thirteen days, when his strength had so far returned that the owner decided to take him home, with a promise to return him for examination once a week. During the time he was at my infirmary, I examined parts daily. For the first week there was little or no signs of

* Presented to the Minnesota State Veterinary Medical Association, January 13, 1904.

collection of fluid within the sack, and not until the 12th day, when I found the sack had increased to the size of one's fist, so decided to make opening with bistoury, allowing contents to flow directly into the bowels. The sack was injected with a solution of iodine as before and nothing further was done, as the patient went home the following day. As usual, patient did not return according to the agreement, and the first sight I got of him after that was six weeks later, when I met man and horse on street, the horse looking well, man happy. It was necessary to kidnap both and take them to my stable in order to examine my patient. The condition of the horse had greatly improved, and there was no indications of the disease or signs of its returning.

No. 2.—September 15th, 1892, a black mare, seven years old, weighing about eleven hundred pounds, belonging to A. H. Linton, 2505 Park Avenue, was sent to my infirmary for examination. I found the patient in good spirits, showing no signs of distress, but when she had been lying down, her legs would become smeared with a viscid discharge coming from an opening in front of mammary glands. Having examined the patient by rectum, by passing the hand over the bladder, a tense cyst-like tumor was easily recognized, being about six inches in diameter, painful on pressure. The patient was cast and probe was passed along the canal of the cyst to where it entered the abdominal cavity, which was at the anterior portion of the pubes, at the median line of linea alba. Having opened the canal at this point, a probe was passed into cyst, which could be easily felt—inside the tumor—with hand in rectum. I then passed probe-pointed bistoury through opening, making cut one inch and one-quarter in length, directly along the line of the abdominal tunic. The fluid passed off with a rush, so that all could not be measured. It was estimated at about twenty ounces. After cleansing parts, and injecting out with one two hundred and fiftieth corrosive solution, the patient was let up, taken home and continued at work, parts cleansed twice each day with $5\frac{1}{10}\%$ per cent. thymolic acid. Parts healed very rapidly, the patient being kept at work; no signs of returning trouble has ever been seen. The animal is still alive and well, though nearly twenty years of age.

No. 3.—May 26th, 1903, a gray mare belonging to George Miller, was sent to my infirmary to be examined. History of case given by owner was as follows: Wish your opinion as to her ailment, and whether you consider it curable or incurable.

The first symptoms that I noticed were lack of ability to control her urine, about the first of November, 1902. These symptoms have gradually grown worse, till now, when standing, she urinates three or five times an hour, passing with it blood and clots. This has caused her to become so weak that she stands cockled behind, and when driven is practically useless. Her treatment was conducted by Dr. Sexton, prior to February, when she was sent to the Minnesota State Experimental Station for three or four weeks, being returned to me March, 1903. By passing hand into vagina found opening of urethra sufficiently dilated to admit two fingers easily, three with slight



NO. 3.—GRAY FAMILY MARE, BELONGING TO GEORGE MILLER, MINNEAPOLIS, OPERATED MAY 26, 1903; PHOTO TAKEN JAN. 10, 1904.

pressure. The base of the bladder as far as could be reached with fingers showed signs of irritation and with small rough portions about the size of a pea. These would bleed on pressure. Near the median line a small opening could be felt. To ascertain its depth, I passed a No. 10 gum elastic catheter, and found cavity was at least three inches in length. I decided to lay sack open, and for this purpose used a pair of Kneehemmeister's tenaculum scissors, which proved all sufficient, the hook blade being passed within cavity of cyst, so as to hold tissue firm, while cutting with the upper blade. I thus laid the entire cavity open and injected bladder with hydrastius $\frac{1}{2}$

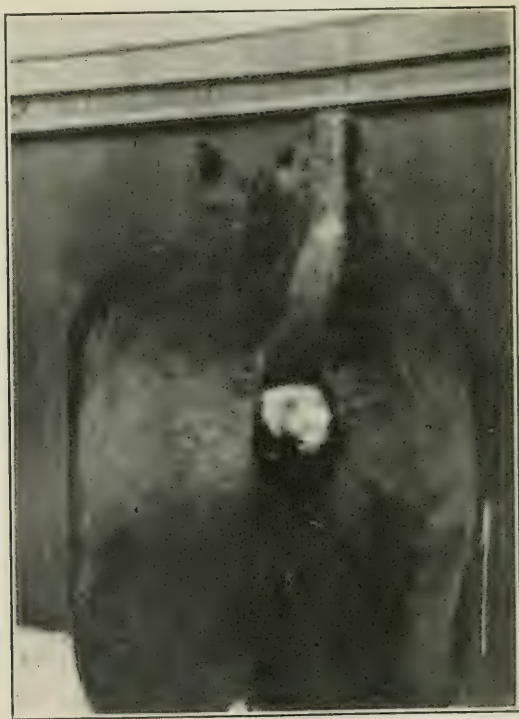
ounce, water 1 ½ ounce, repeating four to five times each day, holding the urethra closed so as to prevent expulsion for at least five minutes each time after injection. Internally the patient was given two drachms each fluid extract uva ursi triticum, repens, buchu and saw palmetto. The mare was taken home June 16th, 1903, after which she was used continually, the internal remedies being used in half size doses two or three times a day. At our last summer meeting clinic, July 14th, several of our members examined the patient, when nothing but a small scar could be found, and the urethra had so contracted as to admit but one finger. Since then she has been apparently in the best of health, doing her usual work.

No. 4.—December 12th, 1903, was asked to examine four-year-old black gelding, weighing seventeen hundred pounds. Following is the history of the case given by owner: Said horse was purchased at Dallas County, Iowa, during the month of August, 1903. He arrived at Minneapolis, August 16th, and was sold August 17th last to Mulvey & Sons, of Stillwater, Minnesota, but was returned to owner August 29th, as being incurable. Dr. A. A. Keyes was called August 29th, to examine and attend the case, at which time he and Dr. Sutzin examined it together, as well as three times subsequently. Their treatment consisted in applying a saturated solution of tannic acid, which was continued each day by stableman. Dr. Keyes said to operate would be sure death, as the animal would bleed sufficiently to cause death if the parts were cut. September 30th, Dr. Eaton examined said horse and ordered continuation of tannic acid treatment as the safest method, as he considered the animal too valuable to risk an operation on him.

October 13th, Dr. C. E. Cotton was asked to examine the horse. He agreed with Dr. Keyes as to treatment recommended, also saying that it was dangerous to operate on him, as the sack would fill with feces so that it could not be healed. Recommended continuation of tannic acid as the only safe method of procedure.

I found a pear-shaped tumor, 6 inches in length, 4 inches at its base, protruding from the rectum. The lower portion of the tumor was highly congested and somewhat lacerated from rubbing against tail, as well as one cut being nearly through the entire coats of the bowel, something over an inch in length, caused by rubbing it either against the stall or by injury from so often being pushed back in position by the attendants. The attachment was at the upper surface of the bowel, 4 inches inside

sphincter. I took patient in my infirmary with the understanding that I should operate on him as soon as I could properly prepare him for it. I at once took all feed away except three light feeds of bran daily, giving purgative to relieve bowels. During the evening of the 12th, Drs. Brimhall and Annand called at my office, so had the pleasure of showing them the case, and to relieve uneasiness, caused by distention of sack, decided to asperate at once by passing trochar through the walls into the



NO. 4.—BLACK GELDING, FOUR YEARS OLD, OWNED BY DAN. EGAN, MINNEAPOLIS. PHOTO TAKEN DEC. 21, 1903, BEFORE OPERATING

sack, letting out contents, which consisted of about 16 ounces of clear fluid. As soon as the fluid was withdrawn, the parts were saturated with fluid ext. witch hazel, and allowed to go back inside the rectum. At the suggestion of Dr. Brimhall, I used suppositories of ice, which soon reduced the irritation and prevented the patient from straining, so that the parts were not thrown out. Within forty-eight hours the size of the tumor was reduced so much as to be scarcely perceptible, and did not pass

out at all. From third day fluid had commenced to accumulate, gradually refilling, so that I decided to operate and remove cyst. Dec. 21st, 1903, after taking photographs, side line was attached to both hind legs, and a twist placed on his nose; proceeded to cleanse parts with $\frac{1}{500}$ per cent. solution formaldehyde, having decided to cut as near the upper posterior part of the tumor as I could conveniently, so as to prevent fæces getting into cut at time of defecation. A perpendicular cut was made $1\frac{1}{2}$ in. long, dissecting through coats of bowel till I came down on sack, after separating edges of cut from cyst. I proceeded to separate the bowel from coats of sack by passing my fingers between them, which was easily accomplished, the attachment being only by areolar tissue, that was easily broken down. Not the least unpleasantness occurred during the entire operation, which did not take over twenty minutes to complete. The only bleeding that was sufficient to stain one's hands occurred in cutting through the bowel, when a small artery was divided. This was easily picked up with the forceps. It was necessary to remove the fluid which had been reformed to allow the cyst to collapse, thus enabling me to bring it through the small opening that had been made. This being done, and the cyst removed, the cavity was washed out with a solution of $\frac{1}{500}$ per cent. formaldehyde and the mucous membranes of the bowel were again saturated with flu. ext. witch hazel, and protruding portion allowed to pass inside of the sphincter. Ice was repeated with as good results as before. No indication of trouble followed the operation, the animal being as hungry for his supper as before. The cavity was injected out each day with $\frac{1}{1000}$ solution permanganate of potassium. The parts were found to be healing nicely with no indications of fæcal matter getting inside of cavity, the mucous membrane of bowel overlapping cut as the fæces passed out. Within ten days the opening was so small that it was difficult to pass even the little finger through the aperture, and the depth of the sack was scarcely an inch. By Jan. 15, when the patient was removed, there was nothing to indicate where the tumor had been excepting a small scar scarcely discernible.

Photos of tumor taken Dec. 21st, 1903, before operation was performed, shows its position and size when protruding. The upper surface showed no sign of congestion of the mucous membrane, being smooth and natural color, while the lower portion shown in photo as dark, was highly congested, very much thickened, fragile, tearing easily, having been abraded in several

places, thus giving the lower portion a grumous angry appearance, and causing the patient considerable uneasiness.



NO 5.—CYST REMOVED FROM FOUR-YEAR-OLD BLACK GELDING, OWNED BY DAN EGAN. INFLATED WITH AIR, $5 \times 3\frac{1}{2}$ INCHES.

This no doubt should be the end of the chapter and my report, but as a thought has struck me, which seems worthy of discussion, the question "What is the cause of these sack cysts, or tumors?" To me it would seem that their appearance in the body so near the median line, probably had to do with the formation of the internal organs when these organs were enveloped or formed; there spaces were left unfilled or not fully developed, which later on formed the nucleus of some foreign growth. You all know how common it is to have trouble with the bladder and its opening through the umbilicus in young colts and fillies, immediately following birth, while on the other hand, tumors, like adventitious buds, may for a long time lie dormant, only to develop as age advances.

A WORLD'S RECORD has been established thus early in the season. It was at Cleveland on the 2d inst., that C. K. G. Billings rode Charley Mac a mile to saddle in 2:15 1-2, thus clipping the record of Great Eastern a quarter of a second.

A RARE OBSTETRIC CASE.

By D. J. HALLORAN, M. D. C., Oconto, Wis.

I report the following case, not that I believe it to be anything new, but I think it rather rare.

Last January, I was requested by a local banker to examine a valuable family cow, with a view of determining whether or not she was pregnant. He informed me that she had been bred April 9, 1903, and that he knew to a certainty that the cow had not come in contact with a bull after that date, and at this time, almost nine months later, was giving a fair quantity of milk, in spite of the fact that he had been trying to dry her.

I examined the cow and reported the uterus containing a foetus, but judging from the size and general appearance of the cow she would not calve before May. Mr. S. appeared to attach very little weight to my opinion, as he was positive that she had not been served by a bull after April 9, 1903, and that she was going to calve in January or was not pregnant. The cow continued to produce a good quantity of milk. On June 13, 1904, he called me again. I found part of the foetal membranes protruding from the vulva and upon further examination found the os sufficiently dilated to admit one finger. After considerable difficulty I introduced my hand into the uterus, and in a pocket on its floor found a foetus, which I removed with no little difficulty, on account of the constricted condition of the cervix, and the absence of any expulsive efforts on the part of the cow.

The appearance of the foetus indicated that it had attained the stage of development found under normal conditions in the fourth month of uterine life. It also appeared hard and partly mummified, containing very little water, very different in appearance from a normal foetus of four months, except in development.

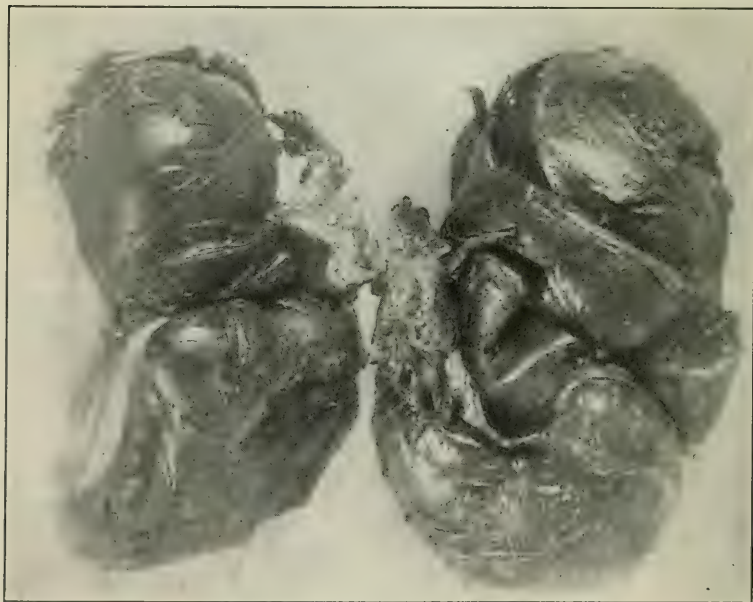
Now, if the owner's statement is true, and I am inclined to believe it is (in fact, I know that the cow did not come in contact with a bull between the latter part of November and the last of May), the only conclusion to come to is that the foetus had remained lifeless in the womb for about ten months without any apparent discomfort to the mother (I omitted to mention that the foetus and membranes were quite firmly adherent to the floor of the uterus).

I hope that I will hear from others having similar experiences.

MELANOTIC SARCOMA (MELANOMA) FROM RED YEARLING
GRADE SHORTHORN STEER.

By JOHN J. REPP, V. M. D., Demonstrator of Surgery, Veterinary
Department, University of Pennsylvania.

Some time since there was brought to my laboratory by Mr. Walter E. Sharp, a veterinary student, a tumor which he had obtained from a red yearling grade shorthorn steer. The site of the tumor was the inner aspect of the thigh near the scrotum. It evidently had its origin in the subcutaneous areolar tissue. It was obviously a tumor which had undergone infiltration with melanin, as it was deeply pigmented and intensely black. Its weight was 1 pound and 4 ounces. The accompanying pic-



ture, reproduced from a photograph, shows on the right the natural surface and on the left the surface of section of the tumor.

A microscopic examination of sections from different parts of the tumor shows it to be a sarcoma of the large round-cell type. I was unable to trace the subsequent history of the steer. At the time of examination the animal was in a fair state of nutrition and there was no clinical evidence of metastasis.

The point to be emphasized in this case is its occurrence in a bovine, which is extremely rare.

Kitt (*Lehrbuch der Allgemeinen Pathologie*, Stuttgart, 1904, p. 353) says that melanoma in bovines is rare and reports that Metz saw two cases in white cattle; one in the pelvic cavity near the uterus and one on the dewlap. Hamburger observed one on the diaphragm, Hoare removed from the temporal region of a brown ox a melanoma weighing 15 kilograms; Bollinger saw a congenital melanoma the size of a fist in the cranial cavity of a 30-day-old calf and Wolf saw a similar one in the subcutaneous tissue of the left pastern.

The case here reported is the only one with which I have met.

THE Canadian government has quarantined a large section of the Northwest Territory against mange in horses, and their removal from the affected tract is prohibited unless and until they have been examined by a veterinary inspector of the department and certified to be free from contagion.

ARTIFICIAL IMPREGNATION.—A correspondent residing in Indiana wants to know if the impregnators advertised are successfully used with mares, as the manufacturers state, and if five or six mares can be bred from one service of the horse. Columns in this journal have been devoted to an exploitation of the impregnation of mares by both the syringe and capsule methods. There is no doubt that in the hands of an ordinary deft man both the syringe and the capsule may be made to work most successfully, and it might be that in very adept hands five or six mares might be successfully got with foal from one service of the horse. We have never known this number of foals to be begotten in this way, though we have known of three. The main thing to be observed is rigidly to obey the instructions sent out with the outfit. The business of so-called artificial impregnation has long passed the experimental stage and the practice has been endorsed by this paper for years. In reply along this line to another subscriber it may be said that it is impossible to transport the life-giving fluid any distance, and such a thing as sending it by mail is ridiculous, wholly out of the question. We have known the fluid to be carried in the capsule, securely covered by the warm moist hand, 40 feet and the impregnation then successfully performed, but that is so far as we know by actual experience the limit of distance to which it may be carried. —(*Breeder's Gazette*.)

EXTRACTS FROM EXCHANGES.

ENGLISH REVIEW.

By Prof. A. LIAUTARD, M. D., V. M.

FRACTURES OF BONES OF THE HOCK [*E. O'Neill, M. R. C. V. S.*].—The first case occurred in an aged bay gelding. While at work he slipped, fell and was dragged by his mate a couple of yards. When he got up he was thought at first to be lame in the hip, but the diagnosis was soon made out. The lower part of the os calcis was breaking out through the skin. Among the symptoms there was a dropping of the quarter and hock, great flexion of this joint, crepitation, inability to carry weight, spasmodic "hitching" or pulling up of the leg, etc. . . . The second case took place in a six-year-old animal. Kept in a stable with others, but separated only by a partition about eight feet long, he was found one morning very lame. He could bear no weight on the injured leg. The diagnosis was uncertain, perhaps a fracture of one of the small bones of the hock. The animal grew worse, his temperature began to rise and remained between 103° and 104° F. His appetite became delicate; bloody synovia soon made its appearance, but, notwithstanding slings and antiseptic dressings, the animal did not seem to improve and he was killed on the sixth day. A fracture of the cuneiform magnum was discovered at the post-mortem.—(*Vet. Record, March 12, 1904.*)

TOOTH TUMOR IN A STEER [*J. D. Stewart, M. R. C. V. S.*].—A steer about being slaughtered was found with a swelling under the right eye; this was partly closed. The air passage was also affected, as the animal snuffled much in breathing. When the steer was killed every organ proved healthy, but the swelling was found very hard. The head was cut in two and boiled and an enormous odontoma was removed from the sinuses. It weighed 5 $\frac{3}{4}$ pounds, and measured 17 $\frac{1}{4}$ and 20 inches in circumference in its two greatest directions. The specimen had the appearance of four large rudimentary molar teeth fused together.—(*Vet. Record, April 2, 1904.*)

MULTIPLE UTERINE MYOMATA IN A COW [*A. Spreull, Jr., M. R. C. V. S.*].—A well-nourished cross-bred Ayrshire cow bought in Sept., 1902, gave birth to a living calf shortly after, and went on milking well, and in good condition until she was killed. She never went to bull, and yet her abdomen grew large

and looked as if pregnant. She had a mild attack of tympanites three days before being killed, which was done for economic reasons. At the post-mortem the uterus only was found diseased. It was greatly distended and contained fifteen growths as big as a melon and numerous smaller ones. These tumors were well defined, yellowish-white in color, oval in shape, of the consistence of firm fibrous tissue, and on section showed bundles of fibres crossing each other in various directions. The whole mass weighed 177 pounds. Prof. McFadyean pronounced its nature typical non-striped myoma.—(*Journ. of Comp. Path and Therap.*, March, 1904.)

LUMBAR TUBERCULOSIS, WITH FRACTURE FOLLOWING, IN A HEIFER [*Ainsworth Wilson, F. R. C. V. S.*].—A healthy cow, kept in a roomy, loose box, all right at night, is found next morning unable to rise. No history, no accident, no previous ailment to explain it. Condition: Complete paraplegia, no control of hind legs, more at fore part of the body; loss of sensation and power of motion extending backwards from the posterior lumbar vertebræ, paralysis of the bladder with retention, rectum packed with fæces, tail flaccid. All other conditions normal. Fracture is suspected and fairly diagnosed by exclusion. To satisfy owner, treatment is resorted to, but with no results, and after three weeks the animal is killed. At the post-mortem a few mesenteric glands were found enlarged, more or less indurated and caseous. A tuberculous, firm, fibrous growth was exposed in close connection with the bodies of the last two lumbar vertebræ, with several areas of cheesy matter close to the bones. Tubercle bacilli were detected in a cover glass rubbed over its cut surface. The lumbar vertebræ, isolated and prepared, showed a fracture of the body and arch of the fifth close to its articulation with the sixth; these two vertebræ were the seat of a rarefying osteitis. Tuberculosis had evidently been preëxisting to the fracture and acted as a predisposing cause.—(*Journ. of Compar. Pathol. and Therap.*, March, 1904.)

AN ENORMOUS TUMOR [*A. Scotson, M. R. C. V. S.*].—Under this title the author records the case of a chestnut horse which in June, 1903, presented under the tail a little subcutaneous growth, which he advised to be let alone for the present. Two months later it was as big as an apple. In September it was twice as big, but yet not disturbing the animal much. For various reasons the tumor was left alone, and it continued to grow until, interfering with defecation, it was decided to remove it, which was done in February. On account of the ad-

vanced age of the animal great attention was given to the administration of the chloroform and the securing. With careful antiseptic preparations of the tail and surroundings, the growth was dissected out, the vessels ligatured and the wound well washed and dressed antiseptically. The tumor weighed 36 pounds, was 15 inches long, by $14\frac{1}{2}$ in width, and 9 in thickness.—(*Vet. Journal*, April, 1904.)

SWALLOWING PLACENTAL MEMBRANES [*Arthur New, M. R. C. V. S.*].—A valuable cow has calved three days ago; she is reported not having cleansed. She breathes with difficulty, has a painful cough, quick small pulse, staring eyes and moves in a staggering way, like a cow which is going to have milk fever. Percussion is painful. No trace of the placental membranes could be found. Acute congestion of the lungs was diagnosed and treatment prescribed accordingly. The cow died the next day. At the post-mortem, the lungs showed slight passive congestion, the abdominal organs apparently healthy, with the uterus contracted almost to its normal size, and without a trace of the placenta left. On opening the stomach for further inquiry a large sized cleaning was found. The great peculiarity of the case is that the cow was secured in her stall in such a way that she could not turn round, and that no one had seen the placenta hanging from the cow or upon the floor. It is probable that she moved the membranes forward with her hind feet to enable her to eat them.—(*Vet. Record*, May 14, 1904.)

A CASE OF INTUSSUSCEPTION [*T. McRoe Frost, M. R. C. V. S.*].—The subject of this report was a bay cob mare which was taken with abdominal pains, which grew rapidly worse, notwithstanding treatment. She exhibited two peculiar symptoms—a constant walking round towards the right side, and a great craving for water. After 24 hours of great suffering the mare died. At the post-mortem the large intestines were found filled with fluid, and they were removed; the cæcum was missing, but on slitting up the large colon a huge mass appeared, which first was taken for a clot of blood and proved to be the cæcum, the whole of which had telescoped within the colon and inverted. A large fibrinous clot, weighing two pounds, was within the cæcal cavity. The mucous membrane of the large colon was thickened to the extent of from two to three inches and was black in color. Small intestine was normal.—(*Vet. Record*, May 21, 1904.)

ABSCESS OF THE LIVER IN A HORSE [*Capt. A. England, Army Veterinarian*].—A fourteen-year-old mare was taken ill,

with high temperature (105.4°), great dullness and listlessness, mucous membranes deep yellow color; she was placed under treatment of sulphate of magnesia. Her temperature varied during her sickness between 103° and 104° . She had some colicky pains, and after a week of illness, she died, having presented no special symptoms except the deep yellow coloration of the membranes and of the urine. At the post-mortem an abscess containing about a pint of thick yellow pus was found imbedded in the left lobe of the liver. The whole organ was highly colored yellow and enormous in size. There was also a considerable amount of inflammation throughout the whole intestines. Evidently the lesions were of long standing, and yet the animal had never showed any signs of illness previous to this.—(*Veterin. Journal, June, 1904.*)

ITALIAN REVIEW.

By Prof. A. LIAUTARD, M. D., V. M.

TRANSMISSION OF RABIES DURING THE PERIOD OF INCUBATION [*Dr. V. Zaggario*].—A six-weeks'-old pup was bitten by a low-bred dog. This one presents nothing abnormal; is in perfect health. Thirteen days later, however, his aspect is changed: he is dull, and two days later exhibits the symptoms of raving hydrophobia; he runs away from home, and is killed, after having bitten several dogs. Five days after the manifestations exhibited by the low-bred dog, the pup is found uneasy, groans, and has paralysis of the lower jaw; in forty-eight hours he dies with dumb rabies. There had been thirteen days between the time he was bitten and the appearance of the first symptoms in the dog that bit him. Nocard and Roux have shown that the saliva of a dog can be virulent before the apparition of any change in the aspect of the dog. This observation shows that the duration of the danger that a dog may offer in the period of incubation of rabies is much increased, if one is not sure that the victim has not been previously bitten.—(*Giorn. della de Soc. Vet. Ital., Nov., 1903.*)

TRAUMATIC PERICARDITIS IN A EWE [*Dr. A. Bragadin*].—It is certain that the inspections of cadavers at slaughter-houses furnish immense material for pathological observations that probably are lost to veterinarians because they are not recorded. It is an error that our *confrères* in America ought not to imitate. The following is interesting, and forms a good addition to the history of foreign bodies in the organism: A four-

year-old ewe while waiting her turn to be killed at the market of Riva, appears sick. She moves with difficulty, her abdomen is tense and painful, respiration accelerated, apparent mucous membranes cyanotic, neck is stretched, head low down. Percussion and auscultation show an increased cardiac area, which is very painful on pressure; the heart sounds as if shaken in a pail of water; there are symptoms of exudative pleurisy. Temperature is up to 41.4° . Diagnosis is made of peritonitis complicated with traumatic pleuro-pericarditis. The animal was killed immediately. There were evident lesions of septic peritonitis—lesions in the chest and in the pericardium, which were filled with purulent serosity. Towards the infero-posterior third of the pericardial wall there was a rather big mass of pathological tissue, which on being incised revealed a sewing needle, whose point was scratching the left ventricle. The carcass was destroyed.—(*Clinica Veterin.*, February, 1904.)

RENAL CALCULI IN A SOW [*Dr. Garibaldo Lisi*].—In the inspection of meat at a market of Pisa, the author observed the following: In a two-year-old sow, which had been slaughtered, he noticed that the two kidneys were quite large; he removed them and made a careful examination. They were not only largely developed, but bosselated, with a fibrous aspect, and when squeezed between the fingers gave the sensation of containing inside a hard substance. Making an incision along the great curvature of the organ, he observed that what remained of the parenchyma of the kidney was compact and hard, and the pelvis was filled with small irregular hard bodies of a yellow-greenish color. They were ten in number, easily broken, rough, of various sizes, and weighed altogether about 15 grammes. In their centre there was a small nucleus of yellowish substance. They were formed of nitrate of urea, with carbonate or phosphate of ammonia. The case is recorded because of the rarity of its occurrence being detected in these animals.—(*Il Nuovo Ercolani*, March 15, 1904.)

TWO CASES OF LOCKJAW TREATED AND RECOVERED WITH SUBCUTANEOUS INJECTIONS OF CARBOLIC ACID (BACCELLI METHOD) [*Dr. G. Croce*].—The first case was a three-year-old horse which had been castrated with elastic ligature and was taken ill ten days after the operation. Having failed in the treatment of other cases with other treatments, the author decided to try the method of Baccelli, viz.: hypodermic injections of carbolic acid. He gave four injections of about 10 grammes each of a solution of pure acid 4 grammes, in glycerine 40

grammes. This was combined with rectal injections of tepid solution, 5 in 1000, about 4 litres at a time. The cutaneous injections had some suppuration. The treatment was continued for five days and on the fifth day improvement set in, followed by gradual recovery. The animal took about 12 grammes of the acid. The second case was an animal which had been recently bought, was lame on the right shoulder, for which injections of saturated solution of chloride of sodium were made subcutaneously and salicilate of sodium given internally. Small abscesses formed and were opened. Ten days later tetanic symptoms were manifest. They were all well marked, and the life of the animal was in danger. The treatment with carbolic acid was also resorted to, and followed by the same result. (*Clinica Veterinaria*, March 12, 1904.)

MEAT INSPECTION AT THE MARKET OF TRIESTE [*Giovanni Spadiglieri*].—As supplement to an article on the presence of cysticercus in bovines, the author records the researches which he made during 1903 at the abattoirs of Trieste, where 33,173 bovines (steers, bulls and cows) were slaughtered, and in 454, or 1.37 per cent., cysticerci were found. At a first inspection they were 261 times in the masseters, 110 in the sublingual region, 47 in the lips. In subsequent examination, they were found 16 in the muscles of the back, 7 in the thighs, 6 in the neck, 3 in the tail, 2 in the loins, once in the pectorals, and once in the diaphragm. The heart was always found free from them. The frequency of the presence of the cysticerci in single groups of muscles or of organs has been found as follows: 337 in the masseters, 184 in the sublinguals, 94 in the muscles of the neck, 75 in those of the back, 64 in those of the thighs, 62 in the sterno-maxillaris, 62 in the loins, 60 in the heart, 59 in the tongue, 53 in the pectorals, 48 in the subscapularis, 45 in the diaphragm, 25 in the intercostal muscles, 25 in the subcutaneous paniculus, 23 in the abdominal and 17 in the caudal muscles. The liver, spleen and kidneys were always free from parasites.—(*Clinica Veterin.*, April, 1904.)

CYSTICERCI IN THE LIVER OF A LAMB [*Dr. Garibaldo Lisi*].—In Nov., 1903, a lamb 35 or 40 days old, was killed, and presented on the liver yellowish nodules, with little vesicles incrustated in the hepatic tissue, which was strongly adherent to the diaphragm and surrounding tissues by strong bands of connective tissue. The nodules, about ten in number, were formed by a little capsule imbedded in the liver or on its surface. The vesicles, three in number, were as big as a pea and

contained a liquid with something in it that looked like a cystic worm. With the microscope a head with four suckers was made out and revealed the nature of the parasite. The other organs and the muscular tissue were free from any lesion.—(*Il Nuovo Ercolani, March, 1904.*)

TWO PECULIAR CASES OF MERCURIALISM IN BOVINES [*Dr. Umberto de Mia*].—On Feb. 26, 1903, the author was called to attend two heifers which had been sick since the day before—one had general eczema all over her body, the other suffering with gastric trouble. The first one was placed under treatment of baths of creolin (10 per cent.) and directed to be secured in such a manner that she could not bite herself. The other animal received for treatment cinchona bark, gentian root, both in infusion, then later nux vomica, rhubarb, aloes, etc. After a few days the exanthem seemed to improve, while, with the other animal, the gastric trouble remained the same. In the meantime, the author remarked that the hairs of the neck of these animals were shorter than on other parts of the body, and on inquiring as to the cause was told that since January mercurial ointment had been rubbed on all the animals of the place to kill the lice they were covered with. A few days later Dr. de Mia was called to visit a calf which, having the symptoms of acute mercurialism, presented a vesicular eruption similar to the one observed on the other heifer. The correct diagnosis was readily made out for the cows of the first observations, proper treatment of iodide of potassium ordered at once, and recovery followed in a few days.—(*Il Nuovo Ercolani, March, 1904.*)

GERMAN REVIEW.

By ADOLPH EICHHORN, D. V. S., Bureau of Animal Industry, Ellis, Kansas.

CONTRIBUTION TO THE QUESTION OF THE PRESENCE OF TUBERCLE BACILLI IN THE MILK FROM REACTING COWS [*Olof Stenstroem*].—For these experiments the author used the milk of cows, of which some were affected with latent, others with clinically recognizable far-advanced tuberculosis, but which in no case showed any signs of affection of the udder. Of 50 such cows the samples of milk were taken in such a manner, that at first some of the milk was removed, and then the udder and neighboring parts were thoroughly cleansed and disinfected. These samples served for injections on 83 experimental animals. The results of the inoculations were positively negative, the

same as those of Ostertag's experiments, and contrary to the results of Rabinswitch and Kempner. All the experimental animals remained free from tuberculosis. Accordingly the danger of transmigration of tubercle bacilli into the milk is very small. The danger lies, as stated at first by Nocard and Bang, only in cases of tuberculosis of the udder, and, in extremely exceptional cases, in cows affected with generalized tuberculosis. In spite of these, it cannot be denied that the presence of tubercle bacilli in the milk is a common occurrence. This apparent contradiction can be explained through the fact that tuberculosis of the udder is more frequent than it was thought to be, as it is quite difficult to recognize it in its early stages on living animals. On the other hand, it frequently occurs that tubercle bacilli will enter the milk from the outside in reacting cows, and as a general rule, only during milking, which up to date was only slightly considered. They derive from the manure of the tubercular animals, with which they remained attached or dried to the udder and neighboring parts. That tubercle bacilli are present in the excrements of cows affected with lung tuberculosis was proven by Ostertag. The guarantee to obtain milk free from tubercle bacilli can only be obtained from such herds in which the eradication is conducted in a rational way, with the aid of tuberculin, and in which a painful cleanliness is observed during milking.—(*Zeitsche f. Thiermed.*)

THE APPLICATION OF BRAIN SUBSTANCE SUBCUTANEOUSLY IN TETANUS [*Dr. Krokiewicz.*].—Four patients which were unsuccessfully treated with pharmaceutical preparations for tetanus, received daily or at several days intervals, the emulsion of a whole brain of a rabbit injected subcutaneously into the abdominal walls. Three of these recovered. Abscesses formed at the places of injections, but these after opening soon healed; other unpleasant results were not noticed. The literature records up to date 16 cases of the same treatment for tetanus, of which 13 recovered.—(*Wochenschr. f. Thiermed.*)

CARCINOMA OF THE BLADDER IN A HORSE [*Lehmeyer.*].—A gelding, 18 years of age, in good condition, lively, free of fever, with good appetite, showed continual dripping of urine, and passed bloody urine, under visible pain, in about half hour intervals, in which also numerous blood coagulas were suspended. The rectal examination revealed a semi-solid consistence of the bladder, of the size of a child's head. Only at one place, the size of a hen's egg, over the neck of the bladder, was fluctuation present; pressure on this caused a discharge of urine.

The animal was destroyed. The autopsy revealed: Bladder the size of a child's head, weighing 3 pounds, and manifesting on its ventral portion cicatricial constrictions to the right and left from the median line. The bladder was almost completely filled with a semi-solid tumor, having a ragged surface, which was diagnosed by Prof. Kitt as a pavement-cell carcinoma. Metastasis could not be found in any of the organs.—(*Wochenschr. f. Thiermed.*)

NEGRI'S PRODUCER OF RABIES [*Dr. Schneder*].—Negri described in his work, "Contribution to the Study and Etiology of Rabies" (*Zeitschr. f. Hygiene u. Infektionskrankheiten*, Bd. XLIII, S. 525) a *protozoon* as a producer of rabies. The size of this protozoon is subject to extraordinary variations. Sometimes it is of the size of 1 to $1\frac{1}{2}\mu$, other times it reaches the dimension of $22-23\mu$. The producer of rabies as proved for a long time, cannot pass through a common bacterial filter. However, according to the statement of Sch., there is a filter which passes the producer of rabies, as he succeeded in every case to produce rabies with the filtrate. This filter will not pass the cholera vibrio, consequently the producer of rabies must be smaller than the vibrio of cholera Asiatica, which has a diameter of 0.4μ . The size of the producer of rabies is therefore under the noticeable form, which can be recognized with our present microscopes. *It is therefore excluded that the organism seen by Negri could be the producer of rabies.*—(*Deutsche Med. Wochenschr.*)

A Cow near Danbury, Conn., has adopted a colt, and is bringing it up with her own calf.

A PIG ADOPTED BY A DOG.—A registered bull terrier, owned by J. Roy Tucker, Calloway Co., Mo., has adopted and is raising a registered Duroc-Jersey pig. The sow farrowed in the barn and the bitch under the barn, and for some reason known only to herself, the bitch wanted one of the pigs in her collection, so she took the pig to her bed with the pups when each was one day old. The pig was taken back to the sow several times, but the bitch would get the same pig and take it back to her bed again. They are the same age, but the pig outgrew the pups, for she is always hungry and fights the pups, till they get the pig by the ear, then it is all over for the pig until the pup is choked off, but they live very happily, and the bitch seems to think as much of the pig as of the pups, and the pig eats, sleeps and goes with the pups.

ARMY VETERINARY DEPARTMENT.

THE "NOCARD TREATMENT" OF GLANDERS.

By OLOF SCHWARZKOPF, Veterinarian 3d Cavalry, Fort Assinniboine, Mont.

(Continued from page 391.)

Glanders Infection at Fort Assinniboine.—When our regiment returned from the Philippines in July, 1902, and took station at this garrison, the horses of the 13th Cavalry were turned over to the 3d Cavalry with the report that several cases of glanders had appeared among them some months previous, but that it was thought the disease had been stopped by killing the diseased horses. While I had been detained in the Philippines to investigate supposed outbreaks of surra, Dr. Gelston had accompanied the headquarters of our regiment to this Post, and in taking charge of the 283 public animals stationed here he discovered that suspects were still among them. Although the infection centered mainly about one stable, there had been frequent interchanges of horses among the various stables in order to mate the horses in color, and he concluded that it would be the safest proceeding to submit all the horses and mules to a mallein test in order to determine the extent of the infection. When I arrived at the garrison in September, he had already tested the greater number of horses, finding several infected horses, and I finished the test, as he was going on a leave of absence.

The summary result of the first mallein test, August–September, 1902, was as follows:

Number of Cavalry horses at Post	190
“ “ mules at Post	93
Public animals	283
Proven healthy by first injection	274
“ infected “ “ “ horses	8
“ “ “ “ “ mules	1

283

The nine infected animals were put into quarantine in a temporary stable. Attempts were made to locate the originally infected stalls, in which we were successful. The infected

stable, as all the others, were thoroughly disinfected, also the horse equipments that had been used on the infected animals. It was also ascertained to a fair degree of certainty that all the nine infected animals had been originally together in one stable, out of which glandered horses had been killed by the veterinarian of the 13th Cavalry. The mule had been used in the troop-wagon of that stable, which was afterwards remembered by the wagon master. The tracing of the infected animals, scattered as they were, to the original place of infection, was a most interesting result of the mallein test, and one not expected at first.

The horses in the quarantine promptly recuperated from the effects of the first mallein test and continued to do well, but the mule showed unmistakable signs of a severer infection, and from previous observation I was sure that he would develop a clear case of glanders or farcy after the second mallein injection.

This was undertaken on November 12, 1902, with the following result:

Animals in Quarantine.	8 horses
	1 mule
	—
	9
Proven healthy by second mallein test.	8 horses
Proven still infected by second mallein test.	1 mule
	—
	9

The eight horses were returned to their respective Troops for duty and they remained healthy up to this date. They do not show the slightest sign of any kind of ever having been infected with glanders, as they certainly had been, judging from the effect the first mallein injection had upon them.

The mule, however, failed rapidly after the second mallein injection. The lymphatics of the right chest and of the inner surface of the left hind leg became swollen and cord-like, and on November 18, 1902, suppurating farcy-buds opened up along their course, and he was destroyed for farcy.

With this case ended the glanders-infection at this Post. We were to receive a large number of remounts, and on inquiry from headquarters whether it was safe to introduce new animals, I confidently reported that it was safe to do so.

About fifty remounts arrived at the Post towards the end of November, 1902, shipped from South Dakota. On December

18, 1902, the farrier of our Troop reported a "suspicious discharge" from the left nostril of one remount horse. The examination revealed several suspicious symptoms of glanders-infection, and the horse was at once isolated in the examination station. By January 19, 1903, this horse had rapidly fallen off in flesh, with the temperature hovering about 104° F., the greenish, sticky, foetid discharge had become copious, but I could not detect any glanders-ulcers in the nostrils. However, the diagnosis was made of acute glanders, the horse was destroyed, and the post-mortem examination showed glandered lesions in the upper air-passages, trachea and lungs.

Inasmuch as the remounts came to this Post suffering from strangles, this case probably was not detected as early as it otherwise would have been, and the possibility of starting a new glanders-infection was certainly great under these circumstances. Yet, no new cases of glanders appeared among the other horses which had all been subjected to the mallein test, and we have had no case of glanders ever since.

In concluding this concise, statistical report, I hope to have contributed some useful material. No doubt there will be those who will still scoff at mallein, the mallein test, and particularly at the idea that repeated mallein injections may, under favorable hygienic conditions, induce recovery from initial glanders. I know a few of such doubters, but I also know that mallein did fail at their hands because it had to fail. It is for those others who are earnest, careful and thoughtful workers, that these statistics are presented, to assist them in their efforts to apply the fruits of bacteriological research to modern veterinary sanitary science. Surely, for such men, a glanders outbreak has little of its former terror left.

ANSWERS TO CORRESPONDENTS.—*C. H. C., Indianapolis, Ind.*: The promotions in the Bureau of Animal Industry are furnished for publication in the REVIEW once a year. We will be glad to comply with your request as soon as the list is received from Washington. . . . *P. H. P., New York*: There will be no one-and-one-third convention rates this year to St. Louis. The reduced fare on account of the World's Fair is even lower than the usual convention concessions. . . . *C. H. B., Colorado*: Eastern castrators usually perform the operation for "straight" castration in the standing position, and the emasculator is the favorite instrument. In young colts an error such as you describe is not necessarily nor usually fatal.

CORRESPONDENCE.

THE INTER-STATE ASSOCIATION OF LIVE STOCK SANITARY BOARDS.

PHOENIX, ARIZONA, July 12, 1904.

Editors American Veterinary Review:

DEAR SIRs:—Have just received the July REVIEW, and I note that Secretary Repp has referred to the meeting of the Inter-State Association of Live Stock Sanitary Boards, to be held at St. Louis, Aug. 23-25, in connection with his letter to members concerning the approaching meeting of the A. V. M. A.

I wish to thank Secretary Repp and yourselves for this assistance. I have been writing to many State and Government veterinarians urging their attendance at the coming meeting, as I desire that it shall be more generally attended than in the past in order that its work may be broadened. We expect papers from Drs. Knowles, Butler (Tate), Pearson, Mayo, and others, besides the assistance that Dr. Salmon has promised to give. This is the first time that the profession has been honored by the Presidency of this association, and I am anxious that the profession generally should be more interested.

Would be glad if you could make some note of the meeting in your August number. Though strictly a sanitary meeting, it is important to veterinarians, as we need the assistance of such boards.

I leave to-night to attend the meeting of Southern California Veterinary Medical Association.

Respectfully yours,
J. C. NORTON.

CONTRIBUTION TO THE STUDY OF THE PATHOLOGY OF PARTURIENT PARESIS.

SALINA, KANSAS, July 16, 1904.

Editors American Veterinary Review:

DEAR SIRs:—As there is a great deal of discussion going on through the columns of the REVIEW about the cause of parturient paresis, I wish to say that while attending the Ontario Veterinary College, Dr. Smith told us of an instance that should help to solve this knotty problem, viz.: It was while a stock show was being held in Toronto, and a milking test was being made. Some of the competitors injected the milk received from the cows from the previous milking into the cows' udders, so as

to have an enormous flow of milk when the time came for the test. Nearly all of these cows contracted the disease, and several of them died of it. This makes it look very much as though some toxine formed in the milk caused the trouble.

Yours truly,

HUGH S. MAXWELL, V. S.

BIBLIOGRAPHY.

MANUAL OF MATERIA MEDICA AND PHARMACY, specially designed for the use of Practitioners and Medical, Dental and Veterinary Students. By E. Stanton Muir, Ph. G., V. M. D., Instructor in Comparative Materia Medica and Pharmacy in the University of Pennsylvania. Third Edition, revised and enlarged. Philadelphia: F. A. Davis Company, Publishers, 1904.

As indicated by the above title, Dr. Muir has undertaken to give practitioners and students of human, dental and veterinary medicine, in a concise and clear manner, those points of the subject which are of value, without the lengthy detail usually found in text-books. No system of classification has been pursued, but the drugs are placed alphabetically, thus allowing of easy reference. The work is divided into three parts. Part I includes general considerations, divisions of medicine, definitions of names and therapeutic actions; Part II, consideration of individual drugs; Part III, pharmacy, which is especially valuable to practitioners, since it gives a clear description of the method of compounding the most important officinal preparations.

COLLEGE COMMENCEMENTS.

NEW YORK-AMERICAN VETERINARY COLLEGE.

The annual commencement exercises of this college took place at University Heights, in conjunction with the other schools of New York University, on June 4, and was largely attended by friends of the graduates and of the University. Chancellor MacCracken distributed the diplomas and prizes, Dr. J. E. Crawford receiving the gold medal presented by the Faculty for the best general examination. The following is a list of the graduates of the session of 1903-04: J. E. Crawford, F. C. Dettner, C. Dorgeloh, E. A. Durner, A. J. Ferster, W. M. Goff, J. F. Gillespie, R. H. Kingston, A. C. Knapp, G. Loughlin, E. J. Magee, E. J. Robbins, A. Shattuck, H. Ticehurst, C. S. Thompson, and F. J. McCarthy.

OBITUARY.

RICHARD J. WITHERS, M. D., V. S.

It is with the deepest regret that we announce the death of this distinguished veterinarian, which took place on May 15, 1904.

Greivous though the loss of such a man must be, it is certainly some satisfaction to those who were near and dear to know that his life was not cut short before the fulfilment of all that it promised for the advancement and elevation of the veterinary profession, and the good of mankind. He had accomplished his life's mission and left us heirs of all the good his great mind had wrought throughout his long and active life.

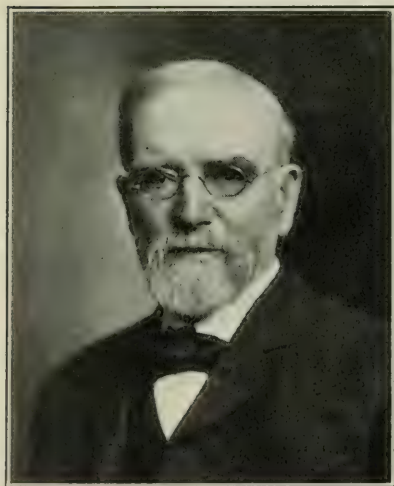
The deceased was a native of Luzboro, Bornsey, Hampshire, England, where he was born Aug. 9, 1835.

In 1864, he came to the United States, and in 1883, he, with the coöperation of Professors Hughes and Baker, established the Chicago Veterinary College, of which institution he remained its President from its commencement until the day of his death. For ten years he occupied the chairs of materia medica and obstetrics, at the end of which time the state of his health required him to seek a milder climate.

He came to California and located in Los Angeles in 1894, and remained there until he received his last call.

While in Chicago his well-known ability secured for him an extensive practice, many of the stables of the larger firms of that city being regularly under his care.

As a preceptor, we can personally testify that he reached the ideal, being a patient and thorough teacher. His lectures demonstrated that he was acquainted with every detail of his subjects, and his management of students showed wonderful judgment and skill.



A good student never had cause to fear him, and many a one had reason to feel grateful for the kind interest with which he developed and drew out the best that was in them. He took a personal interest in the welfare of every student that came before him, and was ever ready with a word of encouragement, counsel or advice, in fact, his attitude toward them was like that of a father to his sons, and his loss will be deeply felt, not only by his immediate relations, but by all that studied under him.

(R. A. ARCHIBALD.)

CANADIAN CONTAGIOUS DISEASES ACT. — Hon. Sydney Fisher, Dominion Minister of Agriculture, proposes to make some important changes in the Act respecting infectious or contagious diseases affecting animals, which was assented to on August 13th last. As the law stands, compensation for animals slaughtered, when the Government decides to make any, shall be one-third of the value of the animal before it became affected, but in no case to exceed twenty dollars for grade animals and sixty dollars for pure-bred animals. These maximum value stipulations are to be altered to read: For grade animals—Two hundred dollars for each horse, sixty dollars for each head of cattle, and fifteen dollars for each pig or sheep; For Pure-bred Animals—Five hundred dollars for each horse, two hundred dollars for each head of cattle, and fifty dollars for each pig or sheep. As in the present law, the value of animals will be determined by the Minister or by some person appointed by him. A change will also be made in the section dealing with animals which have only come in contact with the disease, and are not actually diseased, but, nevertheless, dangerous. Now, the compensation is three-fourths of the value, with a maximum of fifty dollars for grade beasts and one hundred and fifty dollars for pure-breds. According to the proposed legislation, the full three-fourths value will be paid. One new disease is added to the list of mentioned "infectious or contagious diseases," that of "maladie du coit." It is a disorder which has been found in the Northwest Territories, and, it is believed, has come from the United States. The Department will take drastic measures to stamp it out. It has been placed in the list of glanders, farcy, rinderpest, anthrax, Texas fever, hog cholera, mange, rabies, tuberculosis, and other vicious diseases. It is understood that the proposed amenduent to the Act will fill a much-felt want in parts of Canada. The present law does not provide for compensation in case of slaughter of horses.—(*Farmers' Advocate.*)

SOCIETY MEETINGS.

AMERICAN VETERINARY MEDICAL ASSOCIATION.

PROGRAMME OF 41ST ANNUAL MEETING AT ST. LOUIS, MO.,

AUG. 16-19, 1904.

5249 ADDISON ST., PHILADELPHIA, PA., July 20, 1904.

Editors American Veterinary Review:

DEAR SIRs:—I am pleased to announce through the columns of the REVIEW the programme for the St. Louis meeting of the American Veterinary Medical Association, August 16 to 19th, as follows:

Headquarters.—The headquarters of the Association will be at the Monticello Hotel, Pine Boulevard and Kingshighway, adjacent to the Exposition grounds. A special fixed rate of \$6.00 per day for a room with private bath, to contain four persons, has been made by this hotel for our members and visiting friends. This will be \$1.50 for each person. Meals may be obtained at such places as each may select.

The Local Committee will have a list of other suitable hotels and boarding houses in which rooms may be obtained if desired.

Reservations should be made in advance. This can be done by writing to Dr. Chester Miller, 3960 North 11th Street, St. Louis, Chairman of the Local Committee.

Place of Meeting.—The Local Committee of Arrangements have secured the Convention Hall of the Administration Building, inside the World's Fair Grounds for holding the regular sessions.

Special Committee Meetings Monday, August 15, 1904, at the Monticello Hotel.—Publication Committee at 4.00 P. M.
Executive Committee at 7.00 P. M.

PROGRAMME.

First Day, Tuesday, August 16, 1904.

8.00 A. M. Meeting of Executive Committee.

9.30 A. M. Association assembles.

Address of welcome,

Hon. David R. Francis, President Louisiana Purchase Exposition.

Response, Dr. W. Horace Hoskins.

President's address.

Roll-call.

- Minutes of last annual meeting.
 Unfinished business of last meeting.
 Reports of Regular Committees :
 Executive.
 Finance.
 Publication.
 Intelligence and Education.
 Diseases.
 Reports of Special Committees :
 Army Legislation.
 Local Arrangements.
 Pharmacopœia.
 Standard of Excellence and Soundness.
 Revision of Constitution and By-Laws.
 Mutual Aid Association.
 Resolutions.
 Report of Secretary.
 Report of Treasurer.
 Reports of Resident Secretaries.
 Discussion of Reports.
 New Business.
 Election of Officers.
 8.00 P. M. Meeting of Executive Committee.
- Second Day, Wednesday, August 17, 1904.*
- 8.00 A. M. Meeting of Executive Committee.
 9.30 A. M. Association assembles.
 Report of Executive Committee.

PAPERS AND DISCUSSIONS.

"The Treatment of Roup in Fowls," Dr. A. R. Ward, Berkeley, Cal. Discussion opened by Dr. V. A. Moore, Ithaca, N. Y., and Dr. L. Frothingham, Boston, Mass.

"Some Observations on the Comparative Virulence of the *Pyrosoma Bigeminum*," Dr. G. E. Nesom, Clemson College, S. C. Discussion opened by Dr. J. W. Connaway, Columbia, Mo., and Dr. Tait Butler, Raleigh, N. C.

"Creeps, an Osteomalacial Disease of Cattle," Dr. Joseph W. Parker, San Antonio, Texas. Discussion opened by Dr. A. S. Wheeler, Biltmore, N. C., and Dr. C. A. Cary, Auburn, Ala.

"Immunization of Cattle Against Tuberculosis," Dr. Leonard Pearson, Philadelphia, Pa. Discussion opened by Dr. D.

E. Salmon, Washington, D. C., and Dr. John R. Mohler, Washington, D. C.

"When to Operate," Dr. L. A. Merillat, Chicago, Ill. Discussion opened by Dr. John W. Adams, Philadelphia, Pa., and Dr. Chas. E. Cotton, Minneapolis, Minn.

"The Cattle Mange Problem in the West," Dr. Geo. H. Glover, Fort Collins, Colo. Discussion opened by Dr. R. H. Treacy, Bismarck, N. D., and Dr. N. S. Mayo, Manhattan, Kan.

"Veterinary Medicine and Surgery in the Philippines," Dr. Chas. H. Jewell, Manila, P. I. Discussion opened by Dr. Olof Schwarzkopf, Ft. Assiniboine, Mont., and Dr. John H. Gould, Ft. Des Moines, Iowa.

"Needed Reforms in Veterinary Education in the United States," Dr. A. Liautard, Paris, France. Discussion opened by Dr. James Law, Ithaca, N. Y., and Dr. James B. Paige, Amherst, Mass.

"The Possible Eradication of Glanders by the Use of Mallein," Dr. F. F. Brown, Kansas City, Mo. Discussion opened by Dr. J. G. Rutherford, Ottawa, Can., and Dr. W. L. Williams, Ithaca, N. Y.

"Quittors and Sidebones and their Treatment," Dr. C. C. Lyford, Minneapolis, Minn. Discussion opened by Dr. George H. Berns, Brooklyn, N. Y., and Dr. Joseph Hughes, Chicago, Ill.

Third Day, Thursday, August 18, 1904.

8.00 A. M. Meeting of Executive Committee.

9.30 A. M. Association assembles.

Report of Executive Committee.

PAPERS AND DISCUSSIONS.

Paper (subject not selected). Prof. Dr. Johne, Dresden, Germany.

"Vesicular Exanthema of Horses," Dr. Paul Fischer, Columbus, O. Discussion opened by Dr. M. R. Trumbower, Monett, Mo., and Dr. Morgan B. Lamb, Columbus, O.

"Laminitis in the Horse," Prof. John W. Adams, Philadelphia, Pa. Discussion opened by Dr. M. C. Baker, Montreal, Can., and Dr. F. Torrance, Winnipeg, Manitoba.

"Canine Distemper," Dr. Lemuel Pope, Jr., Portsmouth, N. H. Discussion opened by Dr. J. L. Robertson, New York, and Dr. H. A. Meisner, Baltimore, Md.

"Inspection and Animal Quarantine," Dr. J. A. Couture, Quebec, Canada. Discussion opened by Dr. S. H. Ward, St. Paul, Minn., and Dr. M. E. Knowles, Helena, Mont.

"Conditions of Practice met with in the Philippines," Dr. J. H. Gould, Fort Des Moines, Iowa. Discussion opened by Dr. O. Schwarzkopf, Fort Assinniboine, Mont., and Dr. H. C. Simpson, Denison, Iowa.

"A Simple but Effective Live Stock Sanitary Law," Dr. A. W. Bitting, Lafayette, Ind. Discussion opened by Dr. J. I. Gibson, Denison, Ia., and Dr. W. H. Dalrymple, Baton Rouge, La.

Volunteer Papers subject to approval by the Association.

Fourth Day, Friday, August 19, 1904.

9.00 A. M. Surgical and Medical Clinic.

The place where the clinic will be held has not yet been decided upon, but will be announced by the committee at the opening of the meeting.

The committee is not yet ready to announce the complete program for the clinic because it is difficult to determine far in advance what cases will be available for clinical purposes. It is intended that attention shall be given to medical as well as surgical cases, therefore there will be present some animals suffering from internal disease which shall be made the subject of clinical teaching. Following is the part of the programme which has already been arranged:

"Ovariectomy in the Mare" and "Castration of a Cryptorchid Horse," Dr. W. C. Holden, Delphos, Ohio.

"Operations for Quittor and Sidebones," Dr. C. C. Lyford, Minneapolis, Minn.

"Castration of a Horse in Standing Position" and "End-to-End Intestinal Anastomosis with Murphy Button in the Dog," Dr. G. R. White, Nashville, Tenn.

Through the kindness of Dr. G. R. White there will be exhibited at the clinic one or two of the peculiar goats found only in a small locality in Tennessee, and known as "nervous" or "fainting goats."

"Neurectomy for Roaring," Dr. J. S. Anderson, Seward, Neb.

Drs. Joseph Hughes, L. A. Merillat, S. Brenton, E. H. Shepard, F. F. Brown, James L. Robertson, Leonard Pearson, J. F. Winchester, Chas. E. Cotton, Simon J. J. Harger and others will take part in the clinic.

ENTERTAINMENT.

This will consist chiefly in visiting the Louisiana Purchase Exposition which will be readily accessible from our headquarters and convention hall. In addition to the attractions of the Expo-

sition there have been especially arranged a trip down The Pike on Tuesday evening and a trip especially for the ladies and children to the famous Shaw Botanical Gardens on Wednesday afternoon.

The banquet will take place at the Monticello Hotel on Thursday evening at 7.30 o'clock.

Other details of entertainment will be duly announced by the Local Committee at the time of the meeting.

TRANSPORTATION.

The various passenger traffic associations have fixed rates to St. Louis to continue throughout the Exposition. These rates are very low. Each one can get for himself the desired information in reference to accommodations and rates by consulting any railway ticket agent.

A glance at the programme will reveal its unusual merit and a careful contemplation of it cannot fail to arouse in all who have the interests of the veterinary profession at heart an irresistible desire to be present and enjoy its pleasures and profits to the fullest extent.

This year full discussion of the papers, one of the most valuable features of a meeting, seems assured through the assignment of the opening of the discussion on each paper to two members. This it is hoped will encourage a free interchange of views and lead every member present to speak freely upon points in the various papers concerning which he has knowledge or to bring up questions which will call forth information.

Special provision has been made for the consideration by the Association of volunteer papers, the titles of which were received too late for publication in the official programme. All are free to offer such contributions.

Especial effort has been made to have for presentation a complete list of reports of resident secretaries. This will be one of the most prized parts of the proceedings, as these reports afford the only means by which information of veterinary progress in all parts of the country can be obtained. It is thought that this year no resident secretary will fail to either bring or send a report.

Attention is again directed to an advantage it is the rare merit of this meeting to possess, namely, the exhibit of the United States Bureau of Animal Industry at the Exposition. It will be many years before another such opportunity can be had for close-range study of the development of this important branch

of our government, and for the acquirement of knowledge which will be of immense value to every veterinarian.

Japan will be represented by Doctor K. Tsuno, Professor of Veterinary Sanitary Science and Hygiene in the Imperial University, Tokio. The message which Doctor Tsuno will have from that gallant and progressive nation will be of much interest, and no one should miss getting it at first hand.

A cordial invitation is extended to veterinarians and their friends everywhere to attend this convention and it is hoped that a goodly number will avail themselves of this opportunity to make new acquaintances, enjoy meeting old friends and talking over old times and gaining enthusiasm for another year's work.

It is believed that every member of the Association is awake to the duties which his membership implies and that not the least in his mind is the duty of attending the meeting and taking an active part in its work and that none will be absent from his post unless for adequate reason. Should, perchance, a member here and there need a little goading, it is ready furnished in the contemplation of the good things awaiting him at St. Louis. "Press of work," some say, "makes it impossible for me to attend." When calmly considered, could there be any other than one answer to the question, "Is there any work in the stretch of the year which should be rated above that service which each one owes to his profession?" The place to render this service is in the annual meetings. Let us all pull together for a record-breaking meeting in this Exposition year.

Respectfully, JOHN J. REPP, *Secretary*.

NEW YORK STATE VETERINARY MEDICAL SOCIETY.

The annual meeting will take place in Brooklyn, Sept. 14-16, and Secretary Kelly assures us that the 1904 event will, from all indications, excel in interest and value, and probably in attendance, all former gatherings of this live organization. New blood has been infused into the management, and a strong local committee of arrangements has been selected. It consists of Drs. W. F. Doyle (chairman) and Elishu Hanshew, of Brooklyn; Robert W. Ellis, Charles E. Clayton, and Robert W. McCully, of Manhattan, representative metropolitan surgeons, who will undoubtedly bring the clinical section of the programme up to a point of efficiency never excelled. Material will be un-

limited for any operation that may be desired, and members from a distance who may wish to witness any particular demonstration are asked to notify the Secretary, who will instruct the committee to that effect. The clinic will be held at the infirmary of President Berns, 74 Adams Street, where splendid facilities are afforded; the meeting will take place in the Assembly Room of the Wilson Building, where it was held in 1902, the headquarters being also at the same hotel as then (the Argyle). The literary programme will be up to the usual standard, and veterinarians from all sections of the State will be well repaid for their trip to Brooklyn in September. A trolley ride to famous Coney Island, with an inspection of its many attractions, will constitute the chief diversion. Veterinarians from neighboring States will find a hearty welcome awaiting them.

MISSOURI VALLEY VETERINARY ASSOCIATION.

The fortieth regular and tenth annual meeting was held in the Auditorium of the Board of Education, City Hall, Omaha, Nebraska, on June 13th, 1904, and was called to order at 9 A. M. by President F. F. Brown, of Kansas City. After roll-call the minutes of the previous meeting were read and approved.

Among the veterinarians present were: Drs. J. S. Anderson, M. V. Byers, L. P. Beechy, J. A. Berg, F. F. Brown, A. M. Blackwell, D. G. Cooper, A. T. Everett, J. H. Gain, J. I. Gibson, W. D. Hammond, H. Jensen, G. A. Kay, B. F. Kaupp, W. C. Langdon, C. F. Leslie, S. T. Miller, A. W. Miller, D. H. Miller, F. E. Murray, J. H. McNeil, O. Olson, A. T. Peters, H. L. Ramacciotti, J. D. Sprague, V. Schaefer, W. A. Thomas, A. Trickett, G. R. Young, C. J. Young.

The following applications for membership, properly vouched for and favorably passed upon by the Board of Censors, were then presented by the Secretary: Drs. H. F. Boettner, Perryville, Mo.; A. T. Everett, So. Omaha, Neb.; J. I. Gibson, Denison, Iowa; J. H. Gain, Lincoln, Neb.; W. D. Hammond, Wayne, Neb.; M. Jacob, Ames, Iowa; A. T. Kinsley, Kansas City, Mo.; G. A. Kay, Avoca, Iowa; C. F. Leslie, Wahoo, Neb.; W. C. Langdon, Omaha, Neb.; A. W. Miller, So. Omaha, Neb.; S. T. Miller, Shelby, Iowa; D. H. Miller, Harlan, Iowa; A. A. Munn, Holbrook, Neb.; W. R. O'Neal, Lyons, Neb.; G. R. Young, Omaha, Neb.

Dr. A. T. Peters moved that the by-laws be suspended and

the Secretary be instructed to cast the vote of the Association for the names of applicants read to become members of the Association. Seconded and carried. The Secretary then cast the vote of the Association.

Under Communications and Correspondence the Secretary read a letter from Dr. A. Liautard, Paris, France, acknowledging the receipt of \$20 (102 francs) for the Nocard Monument Fund, which was appropriated at the last meeting by the Association for this purpose. The receipt from the committee was also enclosed.

Regrets of inability to attend the meeting from Dr. N. S. Mayo, Manhattan, Kas., and Dr. D. F. Luckey, Columbia, Mo., were also read.

Under "Reports of Committees," The Legislative Committee stated that it was not ready to report at this time.

Under "Unfinished Business" the following resolutions, which were introduced at the last meeting, were presented :

"*Resolved*, That Art. I of Chapter 2 be stricken out, and the following be adopted: The meetings of this Association shall be held the second Monday in January and July each year. The place of meeting shall be decided by the officers of the Association and Board of Censors."

Moved by Dr. A. T. Peters that this resolution be adopted as read. Seconded. Moved by Dr. H. L. Ramacciotti that a rising vote be taken. Seconded and carried. The vote was then taken, which was carried unanimously.

"*Resolved*, That Art. I of Chapter 4 be amended as follows :—He shall be a graduate of a regularly organized veterinary school, college, or university that is recognized by the American Veterinary Medical Association."

Moved by Dr. A. T. Peters, seconded by Dr. H. L. Ramacciotti, that the following amendment be attached to the second resolution : "This provision shall not apply to graduates who matriculated on or before October, 1903, who shall be eligible in accordance with the old by-laws."

The amendment carried. A vote was then taken on the whole, which unanimously carried.

The election of officers for the ensuing year resulted as follows :—

President—Dr. J. H. McNeil, Ames, Iowa.

First Vice-President—Dr. V. Schaefer, Tekamah, Neb.

Second Vice-President—Dr. D. H. Miller, Harlan, Iowa.

Secretary-Treasurer—Dr. B. F. Kaupp, Kansas City, Mo.

Board of Censors—Dr. H. Jensen, Weeping Water, Neb.; Dr. F. F. Brown, Kansas City, Mo.; Dr. A. Trickett, Kansas City, Mo.; Dr. J. I. Gibson, Denison, Iowa; Dr. N. S. Mayo, Manhattan, Kan.

Moved by Dr. H. L. Ramacciotti, that \$25 a year be appropriated for the services of the present Secretary as long as he serves the Association in that capacity. Seconded by Dr. A. Trickett. Dr. J. H. McNeil proposed the following amendment: "That the original motion read \$25 and expenses." Said amendment was accepted by both Drs. H. L. Ramacciotti and A. Trickett. Motion carried.

The President then read the annual address:

PRESIDENT BROWN'S ADDRESS.

"Those familiar with the history of the Missouri Valley Veterinary Association are doubtless aware that its organization was effected ten years ago.

"From a charter membership of fourteen veterinarians our Association has grown in membership from year to year, until at our regular meeting held in January last, we had reached an enrollment of seventy-five.

"In response to a request of a goodly number of our members and the kind invitation of the local veterinarians, it was decided to pitch our tent for the tenth annual meeting in the Nebraska metropolis, the renowned Omaha. Inasmuch as a session had never been held this far north, it was thought that the veterinarians of the north Missouri Valley were entitled to the benefits and uplift that might come from the assembling of the members of this Association in their midst. Counter-attractions this year may somewhat detract from the large attendance we enjoyed at our last session, as many of our members doubtless contemplate attending the American meeting later in the season, in conjunction with a visit to the Louisiana Exposition at St. Louis. We trust, however, for those who have cast aside the cares of a busy practice for a day, in order to engage in the discussions of the very interesting topics to be presented to-day, that the memory of the tenth annual meeting will be freighted with profit and pleasant associations.

"At the time this organization was effected ten years ago, the general business conditions were greatly demoralized and the veterinarians shared in the general depression that then prevailed. To-day we are laboring under different conditions. The prosperity we are enjoying is felt by every man engaged in prac-

ting his profession. The stock-raiser is on the alert to avoid loss from disease, as his domestic animals are now a source of satisfaction and profit, and he naturally turns to the veterinarian for advice and professional skill to assist in protecting his herds from disease, and restoring to usefulness his maimed and ailing animals.

"The rapid advance in the price of realty within the past few years is forcing upon the agriculturist, particularly in the corn belt, the fact that he must couple stock-raising with cereal-culture if he is to continue his vocation with profit. As he studies the problem he is led to see that the demand is for animals of high class and quality, be it for milk or meat, road or draft purposes, so that the general trend is towards animals of higher values. The great ranges of the West, which have so long been the source of cheap horses, beef and mutton, are rapidly growing less in number and extent. They are being converted to other uses, so that it is only a question of time when this source of cheap production will be limited to isolated areas. The advance in the price of realty will necessarily lead to a like increase in the value of our domestic animals, which argues that the demands for the qualified veterinarian will continue to grow from year to year.

"In years past the stock-owner has not always embraced the veterinarian with open arms. Doubtless he has had some good reason for standing aloof. Unfortunately for the profession, the unqualified man and the charlatan have been too much in evidence. The ignorance of the one and the chicanery of the other have cost many a well-meaning, qualified veterinarian months of patient labor to overcome the prejudice against the profession. These two classes have always been a hindrance to the advancement and higher achievement of our profession. They are the great leprous spots, that in the mind of the public taint the profession. Together they constitute the one great factor that is to-day standing in the way of legislation that would enable us to take a position alongside of our brothers in human medicine. The ignorant man is, of course, unschooled. The unscrupulous man may have had some training in a veterinary college, and if a close analysis of the cause of his conduct could be made, it could in many instances be traced to bad tutelage. He who attempts to instruct others in the science of veterinary medicine, assumes a double task. Not only should he qualify the student for the practice of his chosen profession, but he should by example and precept instill into his mind

ideas of good citizenship, and broad-gauged professional standards, so that when he passes from the environment of college life he will always aspire to earn the respect of his fellow-citizens by right living, as well as to advance his profession, instead of selfishly tearing it down. It is to be regretted that there are teachers in veterinary colleges who disregard the higher aim and plane of the profession and lend themselves to debasing and unprofessional practices. In such cases the central and prevailing motive seems to be to get the student's money, fill him with egotism and supply him with a fund of sharp and questionable practices, instead of imbuing him with wisdom, and a high sense of honor and professional dignity. The result of such training is to convert the student into a 'hoss doctor' instead of a veterinary surgeon, to turn loose upon the unsophisticated public the creatures of vicious education, and I am sorry to say that the rapidity with which this is accomplished is appalling, it requiring but a remarkably brief period of time. Our profession has not yet attained an age where the public fully accepts it as a learned profession. Many otherwise intelligent persons seemingly regard veterinary schools as places where students assemble to collect various recipes and remedies for the limited number of diseases of animals with which they are cognizant, and they cannot understand why it is necessary to take three years to do this. Here, then, is a reason why the short-course schools appeal to some and why such schools still enjoy some popularity. Fortunately, however, it is now becoming more and more accepted that three years is none too long to give in school to the study of veterinary science, and some of the State institutions are already establishing still longer courses. It is probable that the private schools will be content for a while at least in revising and strengthening their three-year courses and bringing them to the very highest standard of efficiency, so that when the profession demands a still further advance, it will be an easy step to take. Remembering that this is the great age of scientific progress, we may further note that it is the constant aim and effort of most educational institutions to raise the standard, both for admission and graduation. With this laudable purpose in view, courses are lengthened and the latest inventions and most efficient and complete appliances are obtained and employed. More and more care is being taken to ascertain the ability of the student to take up and pursue a course in science before he is permitted to matriculate. Likewise, standards of admission to the associations aux-

iliary to educational institutions are advancing, and the very nature of progress requires that they must advance.

"This Association has always been very lenient in its requirements for membership. The by-law in regard to membership is somewhat vague and uncertain. It reads as follows: 'He shall be a graduate of a regularly organized and recognized veterinary school.' What constitutes regular organization within the meaning of this clause? By what authority is it to be recognized? Recognition here might mean much or little. Is it not time we were taking advanced ground and speaking in positive terms? Shall we not accept the standard of the American Association, and as it goes forward and blazes the way, shall we not be found following closely in its footsteps? There is a growing feeling among the members of the A. V. M. A. that their membership can be more fully safeguarded by some method of investigating the methods and records of such veterinary institutions as aspire to have their graduates recognized as eligible to membership in that association.

"Our agricultural schools are doing a grand work in laying the foundation for a veterinary education. The opportunities that State institutions possess in the way of teaching students certain subjects related to veterinary science is exceptionally good. Feeding experiments, dairying, stock judging, etc., can be carried out in a manner to satisfy the most exacting. Within the last few years an effort is being made on the part of this class of schools to enlarge their sphere of usefulness to the agriculturist by incorporating into their courses a primary course in veterinary science. Believing that the managers of these State colleges are high-minded men, eager to serve the agriculturist and teach him to minister to the needs of his own domestic animals, and believing that they would not for a moment think of doing anything to reflect upon the veterinary profession adversely, yet, one can see how *this* might occur if such veterinary courses be not wisely directed. In the absence of legislation regulating veterinary practice the opportunity opens for those possessing this rudimentary education to foist themselves upon the people as fully prepared practitioners of veterinary science, and there is danger that those who are not familiar with what constitutes full preparation, accepting it as such, both to the detriment of the agriculturist and the veterinary profession at large.

"In compliance with the instructions of this Association at our last regular meeting, a committee of three was appointed

representing the States of Nebraska, Kansas, and Missouri, whose duty it was made to confer and coöperate with the separate State committees in their attempts to secure legislation regulating veterinary practice. We hope that before this session has ended the advice of the committee will be sought, and the subject of proposed legislation thoroughly canvassed. We hope that if an attempt is to be made to have enacted laws regulating the practice of veterinary medicine at the next session of our legislative bodies, the bills will be fully prepared and arrangements effected early, so that all of the preliminary work may have been completed upon the opening of the legislative sessions. Let there be a mighty effort put forth early, let it be continuous and unceasing, remembering what other States can accomplish we can do also."

DR. PETERS EXHONORATED.

At this time Dr. A. T. Peters, Lincoln, Neb., explained his connection with the Correspondence Agricultural College, Sioux City, Iowa. According to the Doctor's statements and the letters of correspondence between himself and the directors of the concern, it appears that the so-called school had taken the advantage of him and had without authority used his name. He said he had printed a set of lectures the same as given to the classes at the agricultural colleges, but nothing more. He further stated that he had reserved the right to censor any statement made about him by the school. The book was produced and proved not to be as voluminous as the one printed by Dr. Mayo, of Manhattan, Kas., and others. Dr. McNeil said that at the Iowa Agricultural College the lectures were more voluminous than those composing this book. The subject of bulletins published by various experiment stations upon the subject of veterinary science was also discussed. It was the unanimous sentiment of those present that experiment stations should confine their bulletins to research and other original work and not issue bulletins or other literature upon diseases and treatment of the various domestic animals to be disseminated promiscuously among the general public. Dr. H. L. Ramacciotti moved that a committee to investigate charges of violating the Code of Ethics be appointed. Seconded and carried. The President appointed Dr. H. L. Ramacciotti, of Nebraska; Dr. J. I. Gibson, of Iowa; Dr. A. Trickett, of Missouri. At the evening session the committee, after a careful investigation of literature, letters, etc., at hand, made the following report:

"*Mr. President* :—We your committee to whom was referred the question of Dr. A. T. Peters' connection with the Correspondence School of Agriculture at Sioux City, beg leave to report that we have investigated the matter, examined the correspondence between Dr. Peters and the management of said school, and the text-book in question, and after full deliberation find that any rumors to the effect that Dr. Peters has violated the Code of Ethics are entirely unfounded. We, therefore, recommend that Dr. Peters be fully exhonored from censure by vote of this Association.

ARTHUR TRICKETT,
"H. L. RAMACCIOTTI,
"J. I. GIBSON."

The resolution was unanimously adopted.

At 12 o'clock the meeting adjourned and an elegant dinner spread under the directions of the Committee on Local Arrangements.

At 1 o'clock a clinic was held at Dr. H. L. Ramacciotti's hospital, corner 28th and Mason Streets. The clinic was an interesting one and enjoyed by all present.

Among the operations was peroneal tenotomy for relief of stringhalt, by Dr. V. Schaefer, Tekamah, Neb.; demonstration of a new kind of casting harness, by Dr. J. S. Anderson, Seward, Neb.; demonstration of treatment of leucorrhœa in the mare, by Dr. W. C. Langdon, Omaha, Neb. The doctor gave the following prescription, which he had used very successfully:

R Fl. ex. viburnum prunifolium,
" " " opulus,
" " aletris farinosa,
" " canlophyllum,
" " helonias, āā ̄ v.

Sig. ̄ i three times a day, introduced into the uterus in one gallon of water.

Oöphorectomy in the bitch, by Drs. J. S. Anderson and C. J. Young, and an operation upon the foot, for condition caused from nail puncture, by Dr. Schaefer, concluded the clinic.

The meeting was called to order at the hall by the President at 4 P. M., instead of 7 P. M., as per programme, it being the wish of those present to attend the meeting of the Ak-Sar-Ben, at 8 o'clock, an invitation having been extended to the members of the Association.

The first paper was presented by Dr. G. R. Young, of Omaha, Neb., on "How I Treat Fistulæ":

"HOW I TREAT FISTULÆ."

By G. R. YOUNG, D. V. S., Omaha, Neb.

"When requested by your Secretary to contribute a paper for this meeting I was for a time somewhat at a loss for a subject that I thought would be of sufficient interest to the members, but finally concluded that if I could gather together some material on a subject that has by some in the past been dreaded and at present by others given unsatisfactory results, I have ventured to say something on 'How I Treat Fistulæ.'

"I wish it to be distinctly understood, gentlemen, that I am making no pretence whatever of advancing any new theory or method of ridding some of our valuable animals of this often very tiresome trouble. The method I have adopted will undoubtedly draw the fire of cross-examination from my advanced surgical brethren. If I succeed in doing this, I shall feel that what I have to say will bring out the different ideas we all have in the treatment of diseased tissues. I fancy I can hear many of you say, that the only way to treat a fistula is to cut it out. In this I will heartily agree with you, providing you do it. I have cut them until I thought and felt that I had removed everything in the shape of tissue in the neighborhood, only to find that when the healing process was establishing itself to all appearances in a satisfactory manner, that you had to remove more fibrous tissue, and to do this more cutting must be resorted to; this opens up the wound afresh and necessitates delay in the cure, to the annoyance of owner, attendant and operator. I feel sure this has been experienced by many—in fact, I know it is so, even if you don't all admit it.

"Not to become tedious, I will proceed at once and outline my method by speaking of a few cases to illustrate.

"The first was a well-bred four-year-old mare. I was called to see her, and found a small tumor. The owner was anxious to abort it if possible, so I applied a blistering salve, composed of hydrarg. iod. rubr., $\mathfrak{z}$ i; vaseline, $\mathfrak{z}$ i. Hair was clipped off and blister applied. It was considerably reduced and the owner was delighted. She was turned out on pasture and a blister applied by the farmer in whose care she was, with instructions for care, and especially to report if tumor appeared to be swollen or enlarged. This he failed entirely to do, and a visit to the place by the owner found it as large as at first. She was brought to the city and I operated, removing everything, as I have before stated, in the shape of fibrous tissue. This mare was supposed

to have a first-class stable attendant or trainer, who was to dress the wound regularly and report progress to me occasionally. He reported, it is true, but so misleading were his reports that I could place no reliance on them at all. After considerable delay and dallying by the owner on account of his fear of the cost, I told him I could and would only treat the mare under my own personal supervision. He finally consented, and at this stage I found the tumor or fistula of a swollen or puffy nature, with a slight oozing of pus. I syringed out this opening with a solution made from oxychlorine tablets, and the following day began to cast about for some remedy more satisfactory than any I had hitherto used to remove that puffy growth. I had been often successful in absorbing fibrous growths by the free application of the biniodide of mercury blistering salve, and I argued to myself if this applied to the skin will destroy and reduce in size, why not reduce faster and more effectively if used on the inside or underneath the skin. To think was to act in this case, and taking a pair of long grooved forceps, I pinched a little wad of absorbent cotton and twisting the cotton to make a bulbous end I smothered this end with the mercurial salve and inserted it into the fistula, and with a rotary motion anointed the inside of that fistulous sac as thoroughly as I could do, not dressing the parts again for three days. I went through the same process again, but noticed especially that my forceps could not be rotated with as much freedom as before. I dressed this once afterwards, thus making three dressings together under my own supervision and turned it over to the owner as cured in two weeks. He sold it in a short time for \$250.

"Another case was that of a blind gelding owned by a liveryman, and was rented out with another animal to work on wagon. The horse came in one evening quite stiff, and on removing the harness found the upper portion of both shoulders swollen, hot and painful. I was called and attributed the cause due to careless driving of a blind horse on rough and uneven streets. If I remember rightly, the driver did not know one of the team was blind, and consequently allowed it to stumble in and out of holes in the streets without any guidance. The result was a very sore and inflamed shouldered horse the next morning. Hot water applications were used freely, followed by cooling lotions and continued until swelling and soreness disappeared. In reply to an inquiry by the owner concerning nature of trouble I informed him that I suspected a fistula would result. He remarked, 'one of my best horses, and I won't get any use

out of him for six months at least.' I felt sorry, and to make amends I said I hoped that the swelling could be removed successfully without leaving the tumor. Two or three days later, however, the abscess was distinctly visible and pus was found forming. When sufficiently ready I lanced the most dependent part of it, drained the pus and dressed the sac with hydrogen di-oxide, after which I anointed the inside with salve as in the other case. This was dressed on dates of January 11, 13, 14 and 17 of this year. Examining it with the owner on the latter date, he said 'it will come back; they all do'. Gentlemen, it hasn't yet, and I want to say that I would like any of you to examine it and tell me on which side I operated. I wish to add here that this method has this advantage, that when it is cured there is no trace of a scar. Dr. Miller, of Harlan, Iowa, if present, can verify this, as he saw the animal the day previous to the last meeting of the Association at Kansas City.

"On April 12 a gentleman called on me and asked me to examine his horse's neck. There were traces left of a former fistula, and from this an immense abscess had formed well forward of the scapula. I opened it and allowed pus to escape, and it was fully an hour before it had all drained. I syringed thoroughly with hot water with eucamphol added and followed this with the peroxide of hydrogen. This tumor being so large, I inserted the seton needle and used mercurial salve on the seton to act as irritant and absorbent. This animal was cared for by the owner. I personally visited and dressed parts four different times and to my surprise the wound was healed, surface of skin smooth, without any sign of unhealthy tissue. My last visit was made April 25, the horse being operated on April 12. I should add that I prescribed for this horse the following: Calcii sulphide, $\mathfrak{z}$ iss; pulvis hydrastis, $\mathfrak{z}$ iij; M. et. fiat chart. No. 12. Two powders daily in feed. There was such an excessive quantity of pus that I felt impelled to prescribe for treatment internally and believe that it aided the healing process.

"The case I am at present treating is very similar to the last one, and my method has been on exactly the same lines. I have this much to contend with, however, that the owner of this is the most careless and indifferent man I have ever met, but the case is progressing in spite of him. This fistula has been previously operated on, but sold or traded to its present owner as being all right, the scar being caused by barbed wire. It filled very rapidly after he owned the animal and at the time I opened it it was enormously large.

"I will now leave the subject with you, gentlemen, and hope it will be discussed freely."

A lengthy discussion was participated in by Drs. Miller, Gain, Schaefer, Jensen, Peters and others.

This paper was followed by one by Dr. W. A. Thomas, Lincoln, Neb.

YOUNG COCKLEBUR PLANTS POISONING HOGS AND CATTLE.

By W. A. THOMAS, Lincoln, Neb.

"On the 4th and 5th days of May, Chas. Hawley, living a short distance from Hebron, lost 31 head of cattle, presumably poisoned on young cocklebur plants.

"The symptoms were not easy to obtain, as I did not see any of the animals alive. They were described as being quiet until approached, when they became excited and delirious, spasmodic and blind. Some evinced considerable distress by bellowing. However, from the description, I suspected some kind of poison. The cattle fed across a large field, where there was nothing but young weeds two or three inches high. Beyond this there was a field of rye for pasture. At this time of the year there were only about three plants or weeds growing large enough to be eaten; the sunflower, heartease (one of the polygonums) and the cocklebur, the latter two in great abundance. The only lesions I could note in making post-mortem, about twenty-four hours after death, were hæmorrhagic spots upon the heart, and a very few on the intestines.

"On Sunday, May 8th, Mr. Burnham, living about four miles from Lincoln, lost 16 pigs from two to four weeks old. His neighbor, Mr. Abbott, lost at the same time four shoats, weighing about 200 pounds each, which got into the lot with Mr. Burnham's pigs. The lot in which the pigs were kept was about an acre in size. Upon one side were green oats. Upon the other side there was nothing growing except young cocklebur plants. Perhaps I should state that in this lot was an old engine and a brick pile, and some manure that had been thrown there from the stable. A few dock plants were growing among the oats. There was also a pit four or five feet deep, which was the remains of a cellar of some removed building. The pigs died after repeated fits or spasms. They would fall down, squeal and kick. I could not find any particular lesions 24 hours after death.

"During this same week Pat McLaughlin lost seven head of cattle in a pasture near Smartville. A greater part of the

pasture was a muddy bottom, on which was growing abundantly young cocklebur. These cattle did not die as suddenly as those belonging to Mr. Hawley. The post-mortem lesions made on one of them on Saturday, the 14th, 24 hours after death, were the same as in Mr. Hawley's cattle.

"Investigation and Experiment.—Mr. Burnham removed his hogs from the fatal lot for two weeks, then the part where the cockleburs grew was plowed and the hogs returned, where they have since been kept, without loss.

"At the request of Dr. Bessey, I gathered about eight pounds of cocklebur plants on May 28th, and sent them to the Pharmacologist, U. S. Department of Agriculture, Washington, D. C.

"May 30th and 31st I secured a calf for a feeding experiment. Placed it in a lot adjacent to the lot where the hogs were kept. At first the calf ate the plants reluctantly, but later and for a day ate freely of them, without injury. My conclusions are that the young cocklebur plants were poisonous to animals that ate them, and that about three weeks later they lose their toxic properties.

"Dr. Bessey favors me with the following, given by Dr. B. D. Halested, of Rutgers College, N. J.: 'The cocklebur has many cases of death among swine attributed to it.' He discusses the medical action of the burs on the walls of the stomach, and then says:—'There are some instances upon record which indicate that in addition to the impaction in the stomach the cocklebur seed has strictly poisonous properties, reducing the action of the heart and causing death.'"

Dr. A. W. Miller, So. Omaha, Neb., then presented an interesting paper upon the subject of "Veterinarians as Sanitarians."

Dr. A. T. Peters, Lincoln, Neb., made a short talk on a new treatment for azoturia, which has been very successfully used in Germany, and certainly is worthy of trial by American practitioners. The treatment consisted of hypodermic injection of 15 to 25 c.c. of 1 to 10,000 solution of adrenalin three times a day. Of three cases reported, cases Nos. 1 and 2 recovered in two days. Case No. 3 in three days. Catheter was used at each visit and urine was found to clear up rapidly.

Under "Report of Cases," Dr. S. T. Miller, of Shelby, Iowa, gave an account of a contagious malady existing among horses in Iowa, affecting the eyes only.

Dr. F. F. Brown, of Missouri, gave a report on the treat-

ment of purpura hæmorrhagica in the horse. The most successful treatment consisted of intravenous injection of one quart normal saline solution twice daily for three days, then once daily for three days. When a larger quantity was used the results were less favorable. Dr. J. S. Anderson, of Nebraska, said that he had similar results with this line of treatment.

Dr. A. W. Miller, So. Omaha, Neb., reported seeing a bunch of spayed heifers slaughtered in which he observed evidence of tuberculosis, and from the location of the lesions was led to the conclusion that the infection had been introduced by the operator, either by instruments or otherwise.

A motion was made, seconded and carried, to extend a vote of thanks to the Local Committee for the hospitality extended to the Association while in their city, and to the Board of Education for the use of their Auditorium.

At the urgent request of Dr. H. L. Ramacciotti, the meeting adjourned in time to meet at the den of the Ak-Sar-Ben at 8 o'clock. The Doctor is a leading figure in that well-known though local organization, and plays his part excellently. The performance of this order (of which I have not space to tell in detail, and could not, for all are sworn not to reveal the secrets of the order) was enjoyed by all present, and certainly was an event never to be forgotten, especially by those in the rear after a certain act. May long live the name of the Ak-Sar-Ben.

Thus ended another social and educational meeting of the Veterinary Association of the Missouri Valley.

B. F. KAUPP, *Secretary*.

THE SOCIETY OF COMPARATIVE MEDICINE AT THE NEW YORK STATE VETERINARY COLLEGE

at their final meeting in June elected the following officers for the fall term :—

President—W. W. Dimock, '05.

Vice-President—R. W. Gannett, '05.

Secretary—C. L. Roadhouse, '06.

Treasurer—J. F. Miller, '06.

The papers read at the meetings of the preceding month covered quite a wide range of topics and were of exceptional interest. They were as follows :

“Urine Analysis,” J. A. Madden, '04 ; being original inves-

tigation concerning the effect on human urine of food preservatives when ingested.

"Antiseptics and Disinfection," J. Traum, '05; a comprehensive treatment of the subject, in which the methods employed by the New York City Board of Health were explained.

"The Value to the Practitioner of Blood Examinations," C. M. Haring, '04; showing how indispensable a knowledge of blood conditions is to the human physician and how it might become of great value to veterinarians as a diagnostic aid.

"A Case of Broncho-Pneumonia," C. Way, '05; the disease being suspected tuberculosis, but microscopic sections reveal its true nature.

"Determination of a Horse's Age by the Teeth," F. W. Andrews, '05; setting forth the most reliable methods used for telling the age and how to detect artificial marks.

"Diphtheria in Chickens," W. B. Mack, '04; a lantern slide demonstration of the normal and pathological anatomy of a chicken's head and the results of a year's study of the etiology and treatment of the disease.

Three members of the senior class, W. B. Mack, C. M. Haring and H. J. Milks, were recently honored by being elected to Sigma Xi.

The Horace K. White prizes were awarded to W. B. Mack and H. J. Milks, these two being the first and second highest standing men in the class.

Dr. Mack having been granted a University fellowship, expects to spend the coming year in further study of chicken diphtheria.

Dr. Haring has been appointed instructor of Pathology and Bacteriology in the University of California.

Dr. Milks remains in the college as assistant in physiology.

Dr. J. B. Tiffany will fill the Chair of Veterinary Science in the Missouri Agricultural College.

Drs. Gallagher and Cady have accepted positions as Government meat inspectors.

Dr. Walmsley will practice at Massena, N. Y., Dr. Day at Attica, N. Y., Dr. Knapp near New York City, Dr. Gibbs at Dunkirk, N. Y.

Dr. Ocampo will practice in his home country, Brazil.

Dr. Fernandez will study a year in Germany before entering upon government work in Brazil.

The remaining four members of the senior class will either practice or enter Government employ.

THE ALUMNI ASSOCIATION OF THE NEW YORK- AMERICAN VETERINARY COLLEGE.

The regular annual meeting of the alumni association of this college was held in the College building, Monday, April 4th, 1904, at 3 o'clock, President Dr. Wm. Herbert Lowe presiding. Members present : Drs. J. F. Winchester, Wm. Herbert Lowe, R. W. Ellis, W. Horace Hoskins, Wm. Dougherty, W. C. Miller, J. W. Fink, H. D. Gill, T. E. Smith, and J. F. DeVine. Visitors, Dr. John P. Munn, of the Council of N. Y. U., and members of the N. Y. C. V. S.

The minutes of the previous meeting were read and approved.

The Dinner Committee reported that the annual banquet was to be held as usual in conjunction with the alumni associations of the American Veterinary College and the New York College of Veterinary Surgeons, following the meeting, at the Hotel Marlborough.

The report of the Executive Committee was read and accepted.

In the absence of the Treasurer, Dr. Meiners, Dr. J. W. Fink reported that there was a balance of about \$32 in the treasury. His report being only partial, it was accepted as such.

The following class of 1904 were then proposed for membership to the Association by Dr. Miller, Secretary : Drs. J. E. Crawford, F. C. Dettner, C. Dorgeloh, E. A. Durner, A. J. Fester, W. M. Goff, J. F. Gillespie, R. H. Kingston, A. C. Knapp, G. Loughlin, E. J. Magee, E. J. Robbins, A. Shattuck, H. Ticehurst, C. S. Thompson, and F. J. McCarthy, and also the following, members of the New York College of Veterinary Surgeons : Drs. T. Maloney, H. J. Brotheridge, T. F. Fallon, W. H. Yuist, D. E. Watson, and T. E. Smith. It was moved and seconded that they become members after complying with the by-laws of the Association.

The following officers were unanimously elected for the ensuing year :

President—Dr. Wm. Herbert Lowe, Paterson, N. J.

Vice President—Dr. H. D. Gill, 337 E. 57th St., New York City.

Secretary—Dr. W. C. Miller, 141 W. 54th St., New York City.

Treasurer—Dr. J. W. Fink, Washington, D. C.

The President, after thanking the Association very kindly

for the honor and esteem they held him in by electing him to serve as their head for another year, making it a third term, assured the Association of his earnest support, and invited Dr. W. Horace Hoskins to greet Dr. John P. Munn, of the Council of New York University, in the name of the Association.

Dr. Hoskins asked for information as to whether the Veterinary Department was receiving any additional support other than that given it by its faculty.

Dr. Munn then addressed the Association in a very pleasing manner, referring to the condition of the two schools before and after consolidation, and assured the alumni of the high esteem in which the Veterinary Department was held by the University and of the appreciation of the work which is being done by its faculty and made many encouraging remarks as to the future of the Veterinary Department of New York University.

Dr. Hoskins moved that the Board of Censors confer with Dr. Munn at the direction of the President in aiding the advancement of the college. Seconded by Dr. Winchester, and carried.

President Lowe then appointed the following members to serve as the Board of Censors for the coming year :

Dr. H. D. Gill (Chairman), Dr. R. F. Meiners, Dr. R. W. Ellis, Dr. T. E. Smith, Dr. W. H. Hoskins.

After a few remarks by the President, the meeting adjourned.

W. C. MILLER, *Secretary*.

* * *

The banquet took place in the evening at the Hotel Marlborough, 36th Street and Broadway, and proved a most enjoyable occasion, members of almost all of the recent graduating classes, and some as far back as '76, being in attendance, together with a number of invited guests. Dr. W. Horace Hoskins, of Philadelphia, was the toastmaster and performed the functions of that position in his most happy fashion. The toast-list was as follows: "Our Sister Profession," Prof. J. Bethune Stein; "Our Profession," Dr. J. F. Winchester; "The Faculty," Prof. W. J. Coates; "Science," Prof. John A. Mandel; "Ladies," Dr. W. C. Miller; "Organization," Dr. Wm. Herbert Lowe; "Literature," Prof. Roscoe R. Bell; "Ethics," L. J. Tompkins, J. D. Prof. James L. Robertson, Dr. A. C. Hassloch, Dr. Thomas E. Smith, and many others made *impromptu* addresses. The response of Prof. Mandel was one of the most interesting talks that we have ever listened to, it being in the

nature of a lecture upon "Radium," at the conclusion of which he exhibited a tube containing one-sixty-fifth of a grain of the precious metal, which he incidentally explained had cost \$300. All present viewed and admired its wonderful radiant properties. The banqueters dispersed at about 1 A. M., feeling that a most pleasant and instructing evening had been passed among the best of friends.

SCHUYLKILL VALLEY VETERINARY ASSOCIATION.

The eleventh annual meeting was held at Pottsville, June 15th, and was well attended. The meeting was called to order by the President at 1 P. M. Members responding to roll-call were: Drs. F. H. McCarthy, D. R. Kohler, W. G. Huyett, U. S. G. Bieber, Otto G. Noack, F. H. Schneider, E. D. Longacre and A. R. Potteiger.

The session was an enthusiastic one, and business of considerable importance was transacted. Dr. McCarthy made a splendid address, during which he advocated that the annual meetings of the Association be held at Reading.

The Secretary presented and read a number of communications. The Vice-President, Dr. Wehr, was unable to be present. The question of changing the place of holding the annual meeting was introduced, and, after some discussion, the matter was laid on the table until the semi-annual meeting, to be held in December. This will afford ample time for due consideration.

The election of officers followed for the ensuing year:

President—Dr. E. D. Longacre, Shenandoah.

Vice-President—Dr. F. H. Schneider, Philadelphia.

Recording Secretary—Dr. U. S. G. Bieber, Kutztown.

Corresponding Secretary—Dr. W. G. Huyett, Wernersville.

Treasurer—Dr. D. R. Kohler, Boyertown.

Trustees—Dr. Otto G. Noack, Reading; Dr. I. C. Newhard, Ashland, and Dr. G. A. Wehr, Denver.

Dr. Bieber read an interesting paper on "Tetanus," which drew forth much comment. The pathology of the disease was intelligently discussed, and much information of value gleaned.

Dr. Noack followed with a wholesome talk upon the "Fresh Air Treatment in Parturient Paralysis". He said: "The exact cause of milk-fever, or parturient paralysis, has not yet been determined, but Dr. Schmidt, a Danish veterinarian, points out that the disease may be due to poisonous products derived from

tissue changes taking place in the udder, while experience teaches us that certain conditions apparently render a cow of the proper age peculiarly susceptible. In the treatment of this disease we had scarcely made any advance, until the Schmidt-Colding treatment was offered to us in 1898. This was the first real advance toward a scientific treatment, and reduced the mortality to about 20 per cent. A little later, Dr. M. Knusel introduced the inflation of the udder with oxygen and claimed to save nearly 100 per cent." Much enthusiasm was aroused during the discussion of this paper.

Among the other subjects orally discussed were: "Hæmorrhages from the Nostrils," "Fractures," "Fistulæ of the Withers," "Heaves," and "Lameness".

The following were appointed essayists for the next meeting: Dr. A. R. Potteiger, "Influenza and its Complications"; Dr. I. C. Newhard, "Open Joints and their Treatment"; Dr. F. H. Schneider, "Colic"; Dr. G. A. Wehr, "Reports of Cases"; Dr. F. H. McCarthy, "Exostoses and their Treatment".

W. G. HUYETT, *Secretary*.

PASSAIC COUNTY VETERINARY MEDICAL ASSOCIATION.

The regular monthly meeting was held at the office of Dr. Wm. Herbert Lowe, corner Paterson and Van Houten Sts., Paterson, N. J., July 5, with the President in the chair, and was called to order at 8.30 P. M. The following members were present: Drs. Wm. J. Reagan, John H. De Graw, H. K. Berry, Wm. Herbert Lowe, W. H. H. Doty, Wm. H. Lowe, Jr., Wm. J. Fredericks, Geo. W. Pope and Augustus Berdan. The minutes of the Athenia meeting were read and approved.

It being the annual meeting, President Lowe made some timely remarks on what had been accomplished by the local association and outlined work for the coming year.

Secretary Fredericks reported he had received the stomach tubes which the members of the Association had ordered.

Dr. Reagan proposed Dr. Chas. Utz for membership and he received the unanimous vote of the society.

The Secretary reported collecting \$29 and expending \$7.40, leaving a balance of \$21.60. Dr. Lowe, Jr., moved this report be spread in full on the minutes.

The election of officers for the coming year was next in order, which resulted as follows:

President—Dr. Wm. Herbert Lowe.

First Vice-President—Dr. Wm. J. Reagan.

Second Vice-President—Dr. Geo. W. Pope.

Secretary—Dr. H. K. Berry.

Treasurer—Dr. Augustus Berdan.

It was regularly moved and seconded that a vote of thanks be extended to our former Secretary, Dr. Fredericks, for his faithful services in office.

Dr. Geo. W. Pope informed members of the Association that the regular State meeting would be held at Newark, July 14, 1904. All veterinarians are welcomed at this meeting. It was regularly moved and seconded that the meeting adjourn until Tuesday evening, Oct. 4, 1904.

HARRY K. BERRY, *Secretary*.

TERRITORIAL VETERINARY ASSOCIATION.

The above Association met at Edmonton, Alta., recently, Dr. Riddell, Calgary, being in the chair. Secretary C. H. H. Sweetapple, V. S., of Fort Saskatchewan, brought up the business of the Association. The officers elected are: Dr. Riddell, Calgary, President; Dr. Murphy, Strathcona, Vice-President; Dr. C. H. H. Sweetapple, Secretary-Treasurer; Council—Dr. Pickering, Edmonton; Dr. Allan, Leduc; Dr. Forbes, Calgary. It is intended to go to the Legislature for a charter, and thus place the profession on a better footing. The Territories need an ordinance similar to the Manitoba Veterinary Act, if they are to get veterinarians as well qualified as the sister Province to the east. Manitoba has the highest veterinary standard of any Province in Canada, and, until a short time ago, of the North American continent. As a result, better and more efficient veterinary service is afforded, and no hardship is involved. The veterinary profession in the N.-W. T. is entitled to as much consideration as the legal, medical, dental, surveying and other learned professions. Not only so, but the need for more highly-trained men is evidenced by the existence of such serious diseases as swamp fever, *maladie-du-coit* and mange.—(*Farmer's Advocate*, July 20.)

MISSOURI VETERINARY MEDICAL ASSOCIATION.

This Association will convene in St. Louis, Mo., on August 15. All veterinarians will be cordially welcomed.

STANLEY SMITH, *Secretary*.

NEWS AND ITEMS.

DR. W. H. DALRYMPLE writes from England that he will arrive in New York Aug. 13, in time to join the Eastern party *en route* for St. Louis.

MARK WHITE, JR., University of Pennsylvania, '04, has located at Denver, Col., his office and residence being 801 Eighteenth Ave.

DR. W. T. MONSARRAT, Resident Secretary of the A. V. M. A. for Hawaii, writes that he will be unable to attend the St. Louis meeting, at which he fully intended to be present.

DR. D. ARTHUR HUGHES, of the Bureau of Animal Industry, East St. Louis, Ill., is engaged in the preparation of an illustrated article for *The World's Work*, entitled "The Value of Meat Inspection to the Public Health."

DR. ROBERT TURNBULL, Inspector B. A. I., Indianapolis, Ind., was operated for appendicitis June 6, the appendix being completely filled with pus. With the exception of two drawbacks, due to the stitches and overeating, he made splendid progress, and left the hospital on July 4.

FROM DR. L. VAN ES, Chief State Veterinarian of South Dakota, we have received his annual report to the Governor, giving a full account of the operation of his office in the work of combatting and investigating contagious diseases of animals.

AT a meeting of the Ontario Medical Council, on June 29th, it was decided that a committee should investigate the composition of patent medicines now on the market. The advisability of having the formula of all such preparations marked on the packages will be laid before the Legislature.

DR. WERNER RUNGE, of Newark, N. J., drives in his practice a chestnut gelding which has entirely recovered from an aggravated attack of osteoporosis, so serious that he was brought to his hospital in an ambulance and was in slings for months. He consumed pounds of the phosphates during the active stages of the disease.

AN experiment conducted by the Michigan Experiment Station to determine the value of sugar beet pulp compared with corn for fattening sheep and lambs, indicates that the dry pulp, pound for pound, has a feeding value about equal to corn. In the beet-growing section it is expected that pulp will henceforth be very largely utilized in feed-lots.

THE death is announced of Col. Benjamin Lucas Glover, C. B., Army Veterinary Department, Principal Veterinary Officer

in Ireland, which occurred in Dublin April 19, from septicæmia. He graduated from the Royal College in 1870, obtained Fellowship in 1893, entered Army in 1870, promoted to first class in 1880, veterinary major in 1890, lieutenant-colonel in 1897, and colonel in 1902. He had seen much military service at home, in Africa and India.

BROOD OF CHICKENS HATCHED BY CAT.—A despatch to the New York *Herald* from Berlin, Germany, dated June 7, says: "At Buschen, near Dusseldorf, a brood of chickens has been hatched by a cat. The animal flew at the hen each time it ventured to approach, and continued sitting on the eggs until the chickens were hatched in the ordinary course. The chickens now follow the cat about wherever it goes."

FROM DR. ALEX. C. COPE, Chief Veterinary Officer, we have received the annual report of proceedings under the Diseases of Animals Acts, etc., for Great Britain for the year 1903. It reports the Kingdom as entirely free from cattle plague, pleuropneumonia, foot-and-mouth disease and rabies. However, it shows an increase of about 25 per cent. in the number of outbreaks of glanders compared with the previous year, and also an increase in anthrax outbreaks.

DR. M. FRANCIS, Veterinarian at the Texas Agricultural and Mechanical College, College Station, Texas, is making a tour of the Continent, visiting the veterinary schools. A letter from him, written at Hannover, his first stop, says he arrived there about July 1st. He had been there but a few days when he wrote, but was enthusiastic over the fine college buildings, grounds, etc.; there are about 300 students. He will remain at Hannover a while and from there go to Berlin.



A TWO-HEADED KITTEN.—The accompanying photo is that of a kitten, owned by Joseph Hayden, a letter-carrier of Brooklyn, N.Y. The monstrosity lived three days, and took nourishment from a spoon, milk being given in this manner. It is not known if the fluid could reach

the stomach if given through both mouths. No post-mortem was held, and of course the extent of the malformation is not known. Both parents are normal cats.

VETERINARY MEDICAL ASSOCIATION MEETINGS.

In the accompanying table will be found the dates, places of meeting, and Secretaries' names and addresses of all the Veterinary Medical Associations of the United States and Canada, so far as obtainable by the REVIEW. Secretaries are urgently requested to see that the organizations which they represent are properly included in the list.

Name of Organization.	Date of Next Meeting.	Place of Meeting	Name and Address Secretary.
American V. M. Ass'n.....	Aug. 16-19, '04.	St. Louis, Mo.	J. J. Repp, 5249 Addison St., Phila., Pa.
Vet. Med. Ass'n of N. J.....	Jan. 14, 1905.	Newark.	G. W. Pope, Athenia, N. J.
Connecticut V. M. Ass'n.....	August 2.	Waterbury.	B. K. Dow, Willimantic.
New York S. V. M. Soc'y.....	September, 1904	Brooklyn.	W. H. Kelly, Albany, N. Y.
Schuylkill Valley V. M. A....	Reading.	Dec. 21, 1904.	W. G. Huyett, Wernersville, Pa.
Passaic Co. V. M. Ass'n.....	Oct. 4, 1904.	Paterson, N. J.	H. K. Berry, Paterson, N. J.
Texas V. M. Ass'n.....	.....	.....	H. D. Paxson, Ft. Worth.
Massachusetts Vet. Ass'n.....	Monthly.	Boston.	F. J. Babbitt, Lynn, Mass.
Maine Vet. Med. Ass'n.....	.....	.....	C. L. Blakely, Augusta.
Central Canada V. Ass'n.....	.....	Ottawa.	A. E. James, Ottawa.
Michigan State V. M. Ass'n.....	.....	.....	Judson Black, Richmond.
Alumni Ass'n N. Y.-A. V. C.....	April, 1905.	141 W. 54th St.	W. C. Miller, N. Y. City.
Illinois State V. M. Ass'n.....	December.	Chicago.	W. H. Welch, Lexington, Ill.
Wisconsin Soc. Vet. Grad.....	Call of Pres't.	Racine.	S. Beattie, Madison.
Illinois V. M. and Surg. A.....	Aug. 10-11, 1904	Decatur.	W. A. Swain, Mt. Pulaski, Ill.
Vet. Ass'n of Manitoba.....	.....	.....	F. Torrance, Winnipeg.
North Carolina V. M. Ass'n.....	.....	.....	T. B. Carroll, Wilmington.
Ontario Vet. Ass'n.....	December, 1904	Toronto.	C. H. Sweetapple, Toronto.
V. M. Ass'n New York Co.....	1st Wednesday of each month.	141 W. 54th St.	D. J. Mangan, N. Y. City.
Ohio State V. M. Ass'n.....	August, 1904.	St. Louis, Mo.	W. H. Gribble, Washington C. H.
Western Penn. V. M. Ass'n....	1st Wednesday of each month.	Pittsburgh.	F. Weitzell, Allegheny.
Missouri Vet. Med. Ass'n.....	Aug. 15, 1904.	St. Louis.	Stanley Smith, Columbia.
Genesee Valley V. M. Ass'n.....	.....	.....	J. H. Taylor, Henrietta, N. Y.
Iowa State V. M. Ass'n.....	.....	.....	H. C. Simpson, Denison, Ia.
Minnesota State V. M. Ass'n.....	.....	.....	J. G. Annand, Minneapolis.
Pennsylvania State V. M. A....	.....	.....	C. J. Marshall, 2004 Pine St., Phila.
Keystone V. M. Ass'n.....	2d Tuesday of each month.	Philadelphia.	C. J. Marshall, 2004 Pine St., Phila.
Colorado State V. M. Ass'n....	1st Mon. in June	Denver.	M. J. Woodliffe, Denver.
Missouri Valley V. Ass'n.....	.....	.....	B. F. Kaupp, 3712 Michigan Ave., Kansas City
Rhode Island V. M. Ass'n.....	.....	.....	T. E. Robinson, Westerly, R. I.
North Dakota V. M. Ass'n....	2d Tues. Jan.	Fargo.	E. J. Davidson, Grand Forks
California State V. M. Ass'n....	Mch. Je. Sep, Dec	San Francisco	P. H. Browning, San Jose.
Southern Auxiliary of California State V. M. Ass'n....	Jan, Apl, Jy, Oct.	Los Angeles.	H. D. Fenimore, Los Angeles
South Dakota V. M. A.....	.....	.....	E. L. Moore, Brookings.
Nebraska V. M. Ass'n.....	.....	.....	A. T. Peters, Lincoln.
Kansas State V. M. Ass'n.....	January, 1905.	Topeka.	Hugh S. Maxwell, Salina.
Alumni Association A. V. Col....	April each yr.	New York.	F. R. Hanson, N. Y. City.

AMERICAN VETERINARY REVIEW.

SEPTEMBER, 1904.

EDITORIAL.

EUROPEAN CHRONICLES.

PARIS, FRANCE, July 15, 1904.

"DOPING" OR "DOPPING."—"You are just the man I am looking for," said Prof. Kauffman, of Alfort, to me a while ago; "I have been appointed, with Almy and Garcin, by the Secretary of Agriculture to make scientific experiments on the subject of 'doping,' and you, almost an American, can tell me where I can find information on the subject in America."

Of course I could not acknowledge my almost entire ignorance of the subject. I knew, or perhaps thought that I did, that the word was of American (?) invention, and that it was generally admitted, even in France, to refer to some more or less reprehensible practice on race-tracks. I also knew that various substances had been resorted to, such as kola, theobromin, digitaline, ether, caffenin, arsenic, strychnia, etc.; and that was about the length of my knowledge. It was not much. But the fact of the appointment by the Secretary of Agriculture of three veterinarians (one physiologist and two practitioners of high standing) was not to be ignored; and, besides this, an order which is issued by the Secretary of War, by which "doping" or "dopping," as it is written, is strictly forbidden in military raids or courses as being pernicious to horses, and falsifying the results obtained in the trials to which those animals are submitted; and, finally, seeing that not only in France the subject is creating such a sensation, but also in Italy, where Prof. Fogliata writes upon it in the *Giornale d'Ippologia*, I

have thought to call upon my friends of America to ask them some bits of information. Those to whom I have applied have answered me rather in a meagre manner. I then have recourse to my heavy troops, the generality of our practitioners, and ask them to agitate the subject in the pages of the REVIEW, or to let me know where I can have all that has been written in America on "doping" or "dopping" (which is correct?).

* * *

But why should this artificial way of raising the vital power of an animal be so objectionable. A decision of the Jockey Club here has, I think, condemned it, and, if my memory serves me right, punished by exclusion from the track, owners of horses or trainers who resorted to it. Is it injurious? The Secretary of War here says it falsifies the results obtained in races, but still the good that can be derived from it cannot be ignored, and if "doping" is done, based on rules having physiological experiments and therapeutical observations to support them, then why all those objections?

The truth is that scientific facts are on record. In the *Revue* of Prof. Leclainche of February a military veterinarian (Mr. Dellis) records a few cases which are very interesting. An English thoroughbred has been very ill with pasteurellose, pleuro-pneumonia; and convalescence is slow. Placed on subcutaneous injections of cacodylate, in a few days he is fit for a race, in which he runs second. A mare much debilitated by distemper wins a heavy race after a similar treatment. A third, a fourth, a fifth case of similar nature all furnish the same results.

One of those was literally "doped" for racing purposes. Submitted to cacodylate and arseniate of strychnia for five days before a race, this animal won three races successively against horses it could never have beaten before.

For Mr. Dellis the cacodylate used by Americans may be a "doping," but as a means of treatment it is excellent.

* * *

THE USE OF COCAINE AS A DIAGNOSTIC FOR LAMENESS.—
If the REVIEW is correct, the first record of the value of cocaine

in the diagnosis of lameness is due to Dr. Torrance, who in July, 1890, gave our readers his experiments with the drug, which by his writings had already been used in the West by veterinarians for several years. Of course, the method spread: it became a thing of almost daily practice with every veterinarian. The operation, however, was rather limited in its application, the injection being made only on the tract of the nerves of the lower part of the extremity.

Whether this *modus operandi* is of American origin or not, I am not prepared to say, although one of the writers in the REVIEW claims it is. Nevertheless, it is practiced in France, where it was introduced by Mr. Dassonville in 1897, and recently in an excellent article on the diagnosis of lameness, published in the *Revue Générale de Médecine Vétérinaire*, of May 15, 1904, Mr. Drouin makes remarks on this application of cocaine, which endorses so well the method used by us in America, that I must consider it here in a few words.

* * *

Referring to the first discovery of Mr. Dassonville, who uses the muriate salt, and alluding to others who resort to a solution of cocaine and morphine, both as the muriate, thus obtaining a more lasting effect, Mr. Drouin gives the minute method, which, according to Mr. Dassonville, ought to be resorted to, so as to make a methodic diagnosis.

The minute method is as follows: A first injection is made on the median and cubital nerves; if the lameness remains, it is located in the shoulder, arm or superior region of the forearm. A second injection, made on each side of the fetlock; the lameness disappears or remains. In the first case a third injection is made on each side, near the point where low neurotomy is performed, and then, if the lameness disappears, it is located in the foot; if it remains, it is located in the first phalanx. In the other case, viz., if the lameness remains after the second injection, a third is made on a level with the anastomosis of the plantar nerves, and then, if the lameness is removed, the seat is in the lower part of the cannon; if it remains, the lameness is

between the superior third of the cannon and the middle third of the forearm. Finally, to decide, a last injection is made on the cubital; if the lameness disappears, the lesion is in the region where the nerve is distributed, viz., the posterior face of the knee.

* * *

It is certain that Mr. Dassonville has drawn all he could from the advantages offered with cocaine and morphine injections, and many experiments and observations have been required to reach this point. But is it practicable? At least twenty-four hours would be necessary to go through all these injections. "On that account," concludes Mr. Drouin, "there are all the advantages in beginning at the lower part of the leg; indeed, it is known that nine times out of ten the lameness disappears by one injection on the tract of the plantar nerves. Therefore, except in special indications, make a double injection at the fetlock; there will always be time, if the lameness is not removed, to resort at the same examination to the injection of the median or the cubital afterwards, if necessary." I believe this is our way of doing in the States, is it not?

* * *

COLICS IN HORSES AND THEIR CAUSES.—For the past few months, a long and most interesting discussion has occupied almost regularly the time of the members of the Société Centrale in Paris. The subject of it was that of colics. I cannot review the entire subject in the limited space of this chronicle, but will, however, point out the principal points, as I find them briefly resumed in the *Revue Generale*.

In December, 1903, an excellent monograph was published by Mr. Drouin entitled "Colics of Horses and Their Treatment," in which he acknowledged that at the Compagnie des Omnibus, out of 146 horses that had died from colics, 104 had suffered with gastric or intestinal indigestion. This statement brought out at a subsequent meeting another paper from Mr. Butel, also on "Colics, and the Means to Reduce Their Frequency," in which he pleaded that "colics would be less com-

mon, if in large establishments where animals are submitted to a properly regulated régime, close attention was paid to the condition of the teeth. The veterinarians in charge ought to make minute examination of the condition of the dental apparatus and perform the operations required by each peculiar case." One step more, and before long I am sure we will have the French horse dentist making competition with the American, a few of which are already here. Mr. Butel sustained his theory later on by another communication, when he presented the reports he had obtained from army veterinarians, where attention to the teeth had reduced the number of colics in several regiments of cavalry.

In February, 1904, Mr. Jacoulet comes to the rescue. For him colics of indigestion in the army must be considered as due principally to the condition in which horses are kept, to defective alimentation and to the bad manner in which horses are watered; but, yet, if intestinal indigestion forms the majority of cases, it is due to several causes, among which the most important are, imperfect mastication, ingestion of soiled bedding, and paresis of the intestine, consequent upon overwork. Attention to the teeth has been followed by the disparition of the colics among animals subject to them.

So far, then, improper feeding, overwork and bad condition of the dental apparatus are the principal causes of indigestion. Mr. Magnin brings out another cause: insufficiency of drinks. Horses are not allowed to drink enough, and for him the frequency of colics would be considerably reduced if horses had occasion to drink oftener.

* * *

Truly speaking, I don't know if that long discussion has so far brought out many new facts, except probably that of the bad condition of the teeth as a cause of indigestion, and I think it is one of importance, as I have observed that dentistry is here rather behind America. If it is carried, perhaps, a little too far (yes, to the extreme, across the Atlantic), I am afraid it is rather neglected by our French *confères*.

But, now the discussion has changed ground. We are touching on the true pathogeny of colics. Mr. Dassonville writes: "The stomachal or intestinal indigestion is most often accompanied by rupture of the stomach or of the intestine. When there is no rupture, the lesions consist in an enormous distension of the digestive compartments, with hæmorrhagic doting, and at times gangrene of the walls. In the first case, death is attributed to the nocive action of the alimentary substances upon the peritoneum, in the second to 'pain, to a kind of peritonism.'"

The prophylaxy of colics by indigestion imposes two indications: prevent rupture of the digestive organs and reduce the pain. For Mr. Dassonville, the rupture must be attributed to the "expansive forces of the gases contained in the organs," more than to the quantity of food contained in them. These gases are due to fermentation, and it is in paralyzing the microbial agents of fermentation of the alimentary mass, or at least in reducing temporarily their functions, that the fatal sequelæ of their nocive action will be avoided. Puncture of the cæcum, repeated if necessary, followed by the administration of opium in large doses, 80 grammes of the tincture, are the approved methods of treatment. With it he has yet to lose his first patient.

To confirm his theory of the influence of the microbes and of that of the opiate treatment, Mr. Dassonville has recorded a few experiments which he has made and which he illustrated by the exhibition of test tubes containing cultures of microbes taken from the intestines. Some of the tubes are with and others without opium, and by them he shows that opium is not without action on fermentation, that it prevents changes of a chemical order in the solid and liquid elements of the culture, and also prevents or at least modifies the formation of gases; consequently opium must have a useful and appreciable influence against the nocive action of the intestinal microbes.

Resumed conclusions: Puncture the cæcum and repeat it, as it is without danger, and administer opium in large doses.

To which others added: "And clear the intestines as quickly as you can."

Opened in December last, the discussion is not yet closed; however, there are investigations which are pointed out, which will be made later on and which for the present are resumed by: (1) the study of the microbic flora of the intestines and of the fermentation it promotes; and (2) the discovery of the proper means to evacuate gases from the stomach.

* * *

A SILLY ARTICLE FROM AN ENGLISH JOURNAL.—To close, allow me one question: Which is the worst of the three—the idiotic ignorance of the writer, the charlatanic standing of the surgeon (?) who allowed his name to appear in such statement, or the carelessness of the editor of a scientific paper, who allowed in its columns the publication of such a slur upon the American profession, which may not be perfect, but I dare say stands by her records as high as any other in the world? The following is taken from the *Veterinary Record* of July 2, 1904: "*American Methods.—Surgeon Farley Operates on Bacchanal to Remove an Abscess.*—It is one thing to trephine the skull of a man and quite another thing to remove a section four inches square from the skull of a thoroughbred race horse. The man can be put under chloroform and kept quiet during the operation. Experience has demonstrated that horses and other animals do not recover from the influence of powerful anæsthetics, and owners of thoroughbreds take no chances. That is why horsemen are talking about a successful trephining operation performed recently on Bacchanal, the Rayon d'Or steeplechaser that carries Charles Pfizer's colors. The operation is declared to be a triumph of veterinary surgery. The horse was dying from an abscess over the eye, at the base of the brain. In a few days it will be galloping over the turf again. The peculiar conformation of a horse's skull makes trephining a ticklish operation in veterinary surgery. An effort was made to reach the abscess that bothered Bacchanal by probing through the nostrils, but Surgeon Oliver Farley was afraid of probing too

far and touching the brain, which would have been fatal. When the operation was decided upon Bacchanal was taken into a yard adjoining his stable and cast. His feet were firmly secured and two men held his head. It was not possible to administer even a local application of cocaine. The abscess was so close to the eye that the sight might have been endangered. The delicate instrument used for trephining a man's skull gives no idea of the large saw, manipulated by a handle that works like a corkscrew, used for a horse. It was impossible to make the incision over the eye, for a horse's forehead is as thin as cardboard. Lower down on the nose, where the incision was made, it is one-sixteenth of an inch thick. The operation lasted fifteen minutes, and Bacchanal stood it remarkably well. His gratitude, when the abscess was drained and he felt relief from pain that had been almost unendurable for months, was apparent."

A. L.

THE GREAT MEETING OF VETERINARIANS AT ST. LOUIS.

The meeting of the American Veterinary Medical Association for 1904 has gone into history, and when written by an impartial historian it must be set down as the most important from many standpoints of any of the forty-one that have preceded it. It was important in that more veterinarians were in attendance than ever assembled at one place in America before; in that those who were present were absorbed in the proceedings, and maintained their seats throughout the three days' session with a tenacity never before observed; in that more additions were made to the membership than ever occurred in a single year before; in that the committees were represented by their members and were ready with full, comprehensive reports when called upon; in that as a rule the papers announced were read; and in that the discussions of the reports and papers were spirited and interesting. Committees which had in former years ignored the work assigned them on this occasion showed that much thought and considerable effort had been put forth

to make them of value to the membership. There were some exceptions, but in each case the Chairman gave an explanation showing the non-feasibility of the work which had been assigned and asked for their discharge.

Such an instance occurred with the Committee on Pharmacopœia, which has been a dead letter ever since its appointment. The publication of a work covering the subject in a manner worthy of the Association would involve such an outlay of work and money that it simply could not be accomplished by volunteer members; and unless it were of a high order it had best not be undertaken. The Association was therefore wise in discharging this committee.

The Committee on Excellence and Soundness found itself in deep water, and manfully acknowledged that the task of laying down rules to govern professional men in making examinations of animals for soundness was an unpracticable proposition. While the subject is one of extreme fascination in discussion, it is absolutely interminable, and always throws the subject back upon professional knowledge, judgment, and experience.

The Committee on Mutual Aid Association reported through each member in writing, and their conclusions were adverse to the proposition. While there are existing instances to show the contrary, there is lacking in the present case an enthusiast who is willing to take a heavy hold and push the project to a successful issue. The chief objection seemed to be in the fear of making prompt collections of assessments where the membership is so widely distributed, and it was pointed out that in these strenuous insurance days very cheap and satisfactory policies can be obtained from the many companies which are actively competing for business.

The Committee on Army Legislation had no report to make for the reason that there was no occasion during the year for active work. The veterinarians of the Army had requested that no effort in their behalf be made until a measure acceptable to the members of the service could be agreed upon; that any other action would but defeat the chances of success. Through-

out the year the "Army Veterinary Department" of the REVIEW has been a forum for the discussion of a proposed bill to be transmitted to the War Department through military channels, and it is now thought that a measure, modest in demand, wise in its provisions, has been formulated, and ready for a trial of its fate. A new committee has been appointed by the new President, Dr. Knowles, and they held a meeting before adjournment. They stand ready to assist their brethren in the Army at the latter's call, and in the manner that they may request. Enough bills have already found their way into the pigeon-hole of the Secretary's desk to warn us against attempting any other in which all are not thoroughly in accord, and it is to be hoped that in the present case every military veterinarian is convinced beforehand that the measure meets his approval, so that the work of the committee may not be stultified by opposition or indifference. By a recent order of the War Department, members of the service are debarred from activity in promoting legislation for their own advancement, but nothing in the regulations can prevent outside influences from conspiring for their benefit. So that where Congress is to be importuned they will have to rely upon their brethren in the Association.

The work of the Committee on Diseases must ever stand as a monument to their energy and intelligence. Selected with an eye to their geographical distribution, as well as their adaptability, they have each one of them contributed a report upon some important malady prevalent in their locality, and have thus contributed largely to the literature upon American pathology.

The Committee on Publication, not only pursued its specific duties of editing, publishing and distributing the excellent volume of proceedings of the 1903 meeting, but in its report to the Association made some excellent recommendations in regard to the character of the work, which were favorably acted upon by the Association and have become a part of the laws of the organization.

The Committee on Revision of the Constitution and By-

Laws performed its duties thoroughly and the Association is now in possession of a set of by-laws which are without many faults, and at least are couched in a correct English dictum, which could not be said of their predecessors.

So much, then, for the business end of the meeting. What can be said of the scientific papers presented for assimilation and discussion? They were numerous and diversified, and if we may judge by the absorbing interest with which they were received, it may safely be concluded that they were of a high order and of commanding interest and importance.

The educational question was brought forward by many sections—by the President, by the Committee on Intelligence and Education, by a contributed essay, and by a spirited discussion. That little was accomplished need not discourage those who believe the importance of the subject demanded prompt and decisive action. It is a vital question; many conflicting interests have to be considered, that more injury than benefit does not result from precipitate action; and we must be certain when action is taken that the wisest course is pursued. Upon this question the REVIEW hopes to contribute to the discussion during the coming winter, and trusts its readers who give thought to the subject will use its pages to assist in the elucidation of the problem, so that at the meeting of 1905 definite ideas may have taken possession of the members, leading to intelligent and wise action on the part of the Association.

All in all, the meeting just closed must be written down as one a long step in advance of all others that have preceded it.

UNITE FOR A BETTER "REVIEW."

While the publishers of this journal are in constant receipt of letters from its subscribers attesting their appreciation of its value to them, extracts from many of which we have published from time to time, there is no doubt but that it could be made to serve the profession in many additional ways. Through the fortunate circumstance of the senior editor's residence at the

French Capital, his great interest in professional progress, and the facility with which he translates from the press of many tongues, our readers are kept abreast of the events that transpire in Continental Europe and Great Britain, while our collaborators and correspondents at home supply our pages with original articles upon every phase of veterinary theory and practice. The every-day practitioners have for the past few years recorded in the department of "Reports of Cases" page after page of valuable material fresh from the sick stall or the autopsy table, and have done their part in building up "the solid edifice of pathological science." News from the associations have been generously furnished by the various secretaries, and many other departments are well supplied with material of great interest. Through the medium of exchanges, correspondence, and other avenues of information, items of interest to the profession are gathered, and scattered throughout the journal. But the REVIEW could be made a veterinary *newspaper*, as well as a magazine of purely professional reading matter. The *news* of the profession should be recorded in it, just as it is in most of the journals of the human branch of medicine. This cannot be done save by the combined efforts of the members of the profession, and we appeal to our readers everywhere to send in along with their heavier articles, items of news concerning the progress of the profession in their vicinity, personal intelligence regarding themselves or their veterinary acquaintances, or any material that is likely to prove of interest or value to our readers. It will thus enable our readers to keep in closer touch with each other, and to know what is transpiring among their *confrères*.

THE NEW YORK STATE MEETING.

Particular attention is directed to the programme of the New York State Veterinary Medical Society, which appears in this number in the regular department, as it is a very seductive announcement of good things for the veterinarian who is seeking to better his equipment of knowledge, in matters theoretical

and practical. For several years this Society has been giving its members and visitors full returns for the time consumed in attending its meeting, and this year a dividend of large proportions is declared. The clinical section of the New York State meeting has taken first rank among veterinary associations of the world, and the approaching meeting gives promise of eclipsing even its own record. The profession of the whole State, whether members or not, will be cordially welcomed, as will those of neighboring commonwealths. The REVIEW will, as usual, give its readers a full account of all that occurs.

A FEW MONTHS AGO THE REVIEW had the pleasure of welcoming to the realm of veterinary journalism a rather unpretentious little magazine called the *Quarterly Bulletin of the California State Veterinary Medical Association*, which it hoped would prove of great benefit to the profession of the Pacific Slope. After publishing two numbers the Association abandoned it and presented its good will and title to private parties, who have changed its name to that of the *Western Veterinarian*, which seeks a wider field by asking to become the organ of all the Associations in the Western country. It is published quarterly at fifty cents a year, and Dr. Archibald is its editor-in-chief. We renew our felicitations, and trust it may meet with sufficient success to justify its monthly appearance, and to double its present size.

DR. A. LIAUTARD is again the recipient of high honors at the hands of the French Government. Word has just been received in New York that the Secretary of Agriculture of the French Republic has promoted him to the rank of Officer of the Merite Agricole for services rendered in behalf of veterinary science. We congratulate our eminent *confrère* upon the recognition which his long and unselfish labors in behalf of his beloved profession is being accorded him in the afternoon of his distinguished career.

(R. R. B.)

DR. G. E. NESOM, State Veterinarian of South Carolina, professor of veterinary science in Clemson College, and in charge of experimental work at the South Carolina Experiment Station, has received an appointment as Assistant Chief of the Bureau of Agriculture and Animal Industry in the Philippines, and will sail on Sept. 8 to assume charge of the new position, as the Bureau has just been inaugurated in the Islands. He was in attendance upon the St. Louis meeting of the American Veterinary Medical Association, and after spending a short time at the World's Fair, expected to proceed, with Mrs. Nesom, to San Francisco, for embarkation. Several shipments of American horses and cattle have recently been forwarded to Manila, and it is expected that they will supplant the caribou and native horses, as the latter are small and of little value. We wish him good luck in his new field, and hope he will enrich our literature with regard to the new phase of pathology opened up in the Far East.

AN ASININE SUGGESTION.—Johnson—"He said I was an addle-pated jackass. What do you advise me to do about it?" Jackson—"See a good vet."

LICENSED TO PRACTICE IN NEW JERSEY.—The following veterinarians were successful in passing the June examinations of the State Board of Veterinary Medical Examiners at Trenton, and have been duly licensed to practice veterinary medicine, surgery and dentistry in the State of New Jersey: William J. Lentz, V. M. D., Hatboro, Pa.; John H. Morse, V. M. D., Susquehanna, Pa., and Arthur H. Burling, V. M. D., Philadelphia, Pa.

THE MODERN VETERINARY SURGEON.—The absent-minded man who had telephoned to the veterinarian to come with all possible haste greeted the latter apologetically when he appeared breathless before him. "I am very sorry to have called you out, sir," he said with real repentance; "but I was so flustered at the time of the accident that I forgot for the moment that my automobile and not my horse was injured." "Oh, that is all right!" exclaimed the veterinarian in the exuberance of youth. "I am able to handle the case. After I was graduated from the medical college I took a post-graduate course in automobile repairing."

ORIGINAL ARTICLES.**MILITARY VETERINARY HYGIENE.***

* Reprinted from the *Journal of the U. S. Cavalry Association*, for July, 1904.

BY OLOF SCHWARZKOPF, V. M. D., VETERINARIAN THIRD CAVALRY,
U. S. ARMY, FORT ASSINNIBOINE, MONT.

The history of war, ancient, medieval and modern, is pregnant with facts which show the great losses of army animals from the ordinary causes of improper care, overwork, starvation and the introduction of devastating diseases, which have in many instances tied the hands of military commanders, and in not a few have compelled them to desist from further pursuit of a campaign without having gained the real object in view. When all branches of the military art are now studied with the object in view of preparedness for war, then the problem, how to keep army horses in the field alive, healthy and serviceable, is serious enough to warrant a special study by army officers, not only by those of the cavalry and artillery, but by all such as may be dependent upon horses for mounts or for transportation.

Few, indeed, will be those among us who can conscientiously affirm that such has been the case heretofore, or that it is now. It is true that in our army, as in all civilized armies, the subject of the hygienic care of horses is treated in a rudimental manner under the heading of "hippology." But this Greek name implies everything and anything pertaining to the horse, but really nothing in particular about the army horse. This may be one reason why the average books on hippology still contain no more than the old conventional teachings on the conformation of the horse, which is seldom more than skin deep; a few hygienic rules of his care as regards grooming, feeding, watering; some mystic dictates on the recognition of the age by the teeth, a knowledge which is greatly overestimated in its real value by laymen; some rules and pointers on stable management, on biting, saddling, shoeing, and finally some more or less empirical treatise on the injuries and diseases of the

horse. If we follow the historic origin of these "books on the horse" in a technical library, we discover with wonder that they all have remained nearly the same in conception and extent during the last three hundred years and more. One need only to scan the pages of the "*véritable parfait maréchal*" by Solleysel (1617-1680), the similar work of Pluvinel (1570-1620), with its fifty-eight luxurious coppers on the French medieval art of riding, down to the works of the Italian riding-masters, Pignatelli (1550) and Grisone (1518), to find that we have copied much, perhaps unknowingly, from these medieval writers. As one example, it may be interesting to note that the work of Grisone contains that distorted picture of a horse which points out his blemishes and diseases, and which, after 350 years of wandering through "horse-books," has found a place of preservation in our Cavalry Drill Regulations, on page 453.

While I do not intend to assert that our chapters and books on hippology do not contain much that is needful to know by our newcomers into the army, may they be young officers or recruits, yet such books cannot impart more than that "little knowledge which is proverbially dangerous." It is more so dangerous, because the innate love of the horse makes everybody believe that he knows all about a horse and is a born rider. But our publications on the horse demonstrate that we have made little effort to throw off the shackles of empirical knowledge, whereas we should have adapted the results of modern scientific research as embodied in our present day theories of veterinary hygiene.

Some sternly practical horseman may now maintain that officers do not rely much upon the theories of hippology, but that they gain the knowledge of the horse and his care by daily practical experience in the stable, camp and on the march. There is some truth in this, but is it the whole truth? It shall be admitted that many of our older cavalry captains, of years gone by, who really received their lessons on the military care of horses in the actual warfare with the nomadic Indian tribes, were such practical horsemen. They were no hair-splitters on

theories, but common sense, hardy horsemen, who had learned how to help themselves in emergencies, even if their way was not always scientific. They could do things with their own hands if need be, and do it well. But such practical things are little understood or appreciated by the younger officers of our new army; not all of them have the liking for horses and riding that cavalrymen should have, and somehow the feeling must have crept into our arm that the little routine matters of horse management are somewhat beneath the dignity of an officer. The writer does not feel qualified to inquire into the cause of this fact, but for the sake of fairness it may be suggested that our late Philippine campaign, with its hurry and rush, and with its manifold demands for military and civil administration, has compelled our young officers to apply themselves more particularly to other matters of a purely military nature, leaving the ordinary care of the horse to others under them. This shifting of supervision, inaugurated under dire necessity, had its mark stamped upon many a troop in the Philippines, from which the service naturally suffered.

Thus it is evident that the mounted officers of our reorganized army need not only a return to a practical application of the details of military care of horses, but that it is also time to abandon mediocrity and aim at a higher standard of theoretical education in the hygiene of the army horse.

WHAT MEANS HYGIENE?

Dispensing with the ordinary definitions of the term hygiene and the conception of health, let us at once inquire into the fundamental reasons by which the health of horses may be preserved, and how it is endangered. Under ordinary circumstances a horse sustains itself in health if the proper necessities for the existence of his life are provided for him, particularly pure air, good food, sufficient rest and sufficient work. If one or a few of these necessities are changed or absent, then the living body at once exercises a strong tendency to accommodate itself to these changes by the inherent regulatory functions of its various organs, a power commonly called "nature." But

these regulatory functions are not always powerful enough to preserve the balance of health within the system, nor are they always strong enough to overcome the ordinary influences which may endanger it from outside, such as impure air, improper food, too little rest or too much work, and then the animal may succumb to some form of illness or another from its own lack of vigor. Still there are other, more remote causes of disease which are of an entirely different origin, such as poisons, parasites, and the manifold germs which produce disease. The theory of this danger of "bugs," humorously so termed by laymen, may not be as dark as sometimes painted by ultra-scientists, but it is greater than is generally admitted by those who are not familiar with its scientific aspect. We need only to remind our military friends of the ravages which the little "bacillus of glanders" produced among our cavalry horses in the Philippines, as also of the "parasite of surra" which could be seen so extremely alert and busy in the blood of horses infected with them. But even these and many more germs, parasites and poisons are not always positively destructive in their effects if only the animal is in a perfect, normal health. We know, for instance, that the germ of glanders is not always infectious to a healthy horse, but that its propagation and harmful influence is greatly dependent upon a weak and emaciated condition of the horse, such as is favored by insufficient food, hard work and little rest. Thus, in the army we must guard against the introduction of this germ in war when such conditions may prevail.

These few, brief scientific facts, chosen to illustrate our subject, should make it clear that we must not only understand how to provide for a few ordinary necessities of the life of horses, such as proper food, general care, sufficient shelter, etc., if we want to assist his nature in preserving his health, but we must also know how to guard him against the manifold causes of disease. In this broad sense hygiene becomes applied etiology, which means that those of us who have charge of public animals should not merely know and practice a few rules of health, but that we should also sufficiently comprehend the re-

lationship between cause and effect in the diseases of horses and their intelligent prevention.

MILITARY VETERINARY HYGIENE IN THE GARRISON.

Although different animals, such as camels and elephants, have been used at certain periods and under certain conditions of war, the utility of the horse has steadily grown larger for many hundred years past, and to-day the horse remains practically the only animal used in warfare. The useful mule of our army has its own virtues and vices apart from the horse, but he is so near the horse in constitution, needs and ailments, that our consideration narrows down to the hygiene of the horse. This subject is wide enough as ordinarily considered, but it certainly becomes a special study if considered from the military standpoint. Indeed, if the hygienic care of the army horse consisted merely of the teaching of his care in time of peace and in the garrison stable, then the general rules promulgated for well kept horses in civil life might be sufficient for the care of the army horse. This can be seen if we observe the reasonable care and sanitary protection given to army horses in time of peace, which has had great and beneficial results. Anyone acquainted with the hygienic conditions prevailing in the army stables of the foremost European armies must acknowledge this fact if compared with times not so far distant. Only a hundred years ago glanders decimated the mounts of whole armies of Europe during peace, a fact which is almost inconceivable for us to-day. In our own army, too, we have generally fared well in preserving the health of our horses during peace. Much of this good result is due to a sensible, natural hardening of our horses by herding and grazing them whenever possible, and by a general care at the garrison which is laudably free from artificial pampering and that exaggerated race-course-care which has partially invaded some European army stables. But we must not forget that conditions have been very favorable for our own good results. The horses used in the short Indian campaigns were mostly born and reared in the same climate and on the very soil on which they were used, so that they were practically at

home even in the field. Moreover, the isolated situation of our army posts has kept our army horses free from contact with contagious diseases, which is an ordinary cause of epizootic diseases among horses of European armies garrisoned within cities. Finally, the employment of our horses in peace has not yet approached the intense use of army horses in drills and maneuvers which tax so greatly the health and strength of horses in the foremost foreign armies. But withal, we have learned many valuable lessons in the care of our horses, and while we have to learn many more, we need entertain little fear of ruinous diseases among our horses during time of peace.

MILITARY VETERINARY HYGIENE IN THE FIELD.

Granting that all civilized armies have learned how to take proper hygienic care of their horses *in time of peace*, have they also learned how to do so *in time of war*? Let us see. The very moment our horse accompanies the army into the field, he is taken out of all ordinary hygienic conditions of life which are the rule in time of peace. He encounters a variety of strange influences, such as changes of climate, irregularities of care, shortage of food, absence of protection; he has to face peculiar injuries and diseases which are practically unknown in time of peace; in short, it is the unexpected and exceptional in everything that he has to meet constantly. If these changed conditions of life arise for our horses, we have so far been unable to intelligently meet them. It is an indisputable fact that veterinary hygiene in the field is as yet an imperfect science, surely an unapplied science. One need only to study the military writers on the South African War and on our own campaign in the Philippine Islands, to be peculiarly impressed by their endeavors to explain the wasteful destruction of horses in recent wars as something unavoidable, something that goes with modern warfare and for which there is no apparent remedy. This may be so from the purely military standpoint, which considers only the results obtained and counts the loss of horses merely an incident. But those of us who had to deal directly with the

details of the causes of such losses, know only too well wherein the fault of it all lies, and we were never in doubt that the principles of military veterinary hygiene are sufficiently elastic in their scientific aspect to meet the exigencies of warfare in much the same manner as they have met the simpler and better known demands of peace.

That this is not a mere hypothesis but a practical possibility can be proven by simple facts. Many of us have been with troops on the march, in the camps and on expeditions where we had the opportunity to observe the different use and care of horses by different commanders. One troop commander may bring his horses back healthy, in fair condition and good spirits, ready to partake of the good things that come with well-earned rest; another troop commander who has done less work may return with his horses worn out in body, and broken in spirit, unable to recuperate in a reasonable time; and there have been seen detachments of mounted infantry that had done no other work than to occupy some military post and keep open connection with neighboring posts, and yet their horses were in a pitiable condition. Such observation points plainly to a common source for good or evil, which can be none other than the ability of the officer in command of such small organizations to lift himself above the mere military aspect of his mission and to attend equally well to the minor details of husbanding the strength of his horses, or at least to encourage and support by his authority those under him, whose duty it is to perform the work entailed thereby. What is attainable by a commander of a troop ought to be possible for commanders of larger organizations, and there are held out as example the lives and deeds of great cavalry leaders of different nations who knew how to save their horses by judicious care, while others ruined them by neglect or want of knowledge of the hygienic care of horses.

Perhaps some grim warrior may object to such views as sentimental, and maintain that sentiment has no place in an army, and that the life of a horse is not worth considering when a great result is at stake. This assertion has become a military

phrase. It is not denied by anybody that a horse's life has no such intrinsic value as the life of a soldier, as it represents only a money value to the government ; but that is not the real question at issue. The main object of military veterinary hygiene simply is to save as many serviceable, well-trained horses as possible in order to have them on hand and ready for work when such a great result is really at stake. That results are often imagined as greater than they are, or at least estimated as greater beforehand than they prove to be afterwards, is one of the errors of military enthusiasts, who are blindfolding themselves in the pursuit of one object alone. In so doing they lose sight of other issues and their consequences, one of which is the husbanding of the strength of their horses. When these break down prematurely or are entirely lost by diseases, then comes the cry for new mounts. But new horses are seldom procurable in the field on short notice or in sufficient numbers, and when they finally arrive they prove to be raw, unbroken animals of inferior quality, because purchased in haste, unacclimated and emaciated from a long journey ; in fact a hindrance rather than a help in any further movement. This was our experience in the Philippine campaign, and we read that it corresponds with the experiences made during the South African War.

Thus coming down to naked facts, it is not sentiment that aims at the preservation of horses in the field, but a prudent, intelligent foresight developed from adverse experience. The correctness of this contention is acknowledged by many calm and considerate cavalry leaders of different armies, but it would lead us too far to cite their good advices. They have learned that the old proverb, "An ounce of prevention is worth a pound of cure," is not an empty phrase, but that it constitutes an actual truth, by which the modern notion that war necessitates the waste of horses is proven a fallacy that can be successfully avoided by true knowledge and careful attention.

It is not denied that the causes of the losses of horses in the field are many. It is impossible even to mention them all in the infinity of combinations which actual field service presents.

But it can never be difficult for one thoroughly instructed in veterinary hygiene to ascertain their cause and devise means for their further prevention. Yet, mistakes must not be made as to the real cause. One of the common errors is the accusation of shortage of food. This is a calamity. Still, a horse can subsist on comparatively little food for weeks, and even for months, and while he may become poor in condition from losing his stored up fat, yet he can remain healthy and in good spirits and in fair shape for work, if he is only otherwise treated reasonably. But by far the surest and most common cause of the "break-down" of horses in the field is ruthless overwork, absence of sufficient rest, and a continued worry of the animals by that excited rushing and pushing forward which is supposed to underlie the gospel of offensive tactics. A horse can be ridden to death in less than a day by a man who fancies that riding means a perpetual struggle between man and beast, or who is ignorant of the limits of its endurance, or who is anxious to save himself from undue exertion, or who considers the horse merely an automaton furnished to him by a rich government. We are not unmindful of the fact that at times the horse is at fault and not the rider. There are excitable or dull brutes in the ranks, with whom neither patience nor kindness will avail, and we have often enough known other horses that are totally unfit for the military service by faulty conformation and weak constitution. For this the government is responsible by a faulty system of providing remounts. But nowhere is good horsemanship quicker shown than in the field, and fortunately we have always natural horsemen in the ranks who, by their good temper and love for the horses, bring them through a whole campaign alive, healthy and in good spirits, no matter what the hardships may have been for both riders and horses. It is only a pity that such natural horsemen are so few, even in the cavalry.

THE PURCHASE OF REMOUNTS BY CONTRACT.

It has been already indicated that, great as the responsibility of individual commanders of mounted troops is as regards pru-

dent horse-management in war, they cannot always alone be held responsible for losses of horses from premature breakdown by field work or disease. We must look to our government to make proper provisions and allowances, and to the supply departments to properly supply them. One of the most difficult problems is the purchase of suitable mounts for our cavalry. This problem is an old one in our army, but remains unsolved. It has been partially solved by but few European armies, and this only after adverse experience in many wars, dating back hundreds of years. The systems of remounting established by these armies, frequently incorrectly reported, are those of direct or indirect breeding of their army horses. Russia is the only country which has gone so far as to directly breed her own cavalry horses, at least in part. Germany, Austria-Hungary, France and some other countries, have chosen to assist their natural breeding districts by supplying them with suitable stallions bred in the government studs. This latter system is beyond dispute the most noteworthy. It does away with the fruitless discussion of what constitutes a suitable cavalry horse in theory, on which no two officers can agree. It fixes a certain type as most suitable for military purposes, because the sire is bred on such lines of conformation, soundness and intelligence as have proven most valuable in war, and the mares to be covered must conform to a certain standard of breeding and soundness. This system may appear as paternal to us, but it is nevertheless wise, as few breeders would properly mate the sire and mare if the choice were left to them. Thus the armies mentioned are enabled to procure annually a sufficient number of horses, whether horses are scarce or plenty, and they receive a uniform class of horses which are sound by heredity. This latter point is of enormous advantage. In the purchase of remounts from a contractor or dealer, as is the case in our army and in the English army, no such certainty of inherited soundness is possible. We can find a horse sound as he stands; but how soon he may become unsound by ordinary military use no one can foretell. True, there are certain positions of the leg

and formations of joints which probably indicate an inherited predisposition to certain forms of unsoundness, but how few of our inspectors and veterinarians are able to recognize and properly judge such infirmities, which, after all, are based more on guesswork than on real and accurate knowledge. From this reason we have in our army an unproportionally high percentage of horses for periodical condemnation, which few armies and few countries other than ours could afford to pay for. But with all this expenditure of money we are entirely unable to procure even a middle class of horses which are uniform and serviceable, because our remounts come from different sections of the country and of different stock. They generally range all the way from fair horses to the worst scrubs, entirely dissimilar among each other in conformation, size, weight and intelligence—a sorry lot to look at and a worse lot to ride on.

Much has been written on this subject in our military journals for years past, and some excellent suggestions have been made from time to time to remedy these defects. But we have been told by our horse-breeders that any system of breeding our cavalry horses after European fashion will be looked upon by them as un-American, and that our country is well able to supply all horses we shall ever need in time of peace or war. As such opinion must have a certain weight with our government, it would be inpolitic at present to dispute this point, and we shall have to look for the next best method of supplying our army with suitable remounts.

REMOUNT DEPOTS.

There is only one substitute which can be regarded as at all promising good results in remounting our cavalry, and that is the establishment of remount depots. It has been announced that Fort Riley, Kansas, has been selected for the location of such a depot, because this post is a natural center of our army, it lies near some of the best breeding districts of saddle horses in the country, and its large reservation secures ample room for the erection of the necessary buildings. As we are new in such an enterprise, a timely warning may be permitted not to copy

too close the old plans of the European establishments, to cram together a few large stables in a comparatively small area. This is against all principles of veterinary hygiene, and has had its disastrous results in fostering the peculiar diseases of remounts which are bound to develop among young horses. There should be plenty of room everywhere, with a number of smaller stables and several isolated veterinary hospitals, with running yards, paddocks, and pastures for grazing. Only with all these points skillfully observed will we succeed to develop colts into well-grown cavalry horses, for that is the real object of a remount depot in peace. Of course, we may purchase four-year-old colts at the start, as we have done so frequently, and allow them to fully mature instead of prematurely ruining them in the ranks. But we shall soon learn, as most European armies have learned, that we are obliged to purchase younger animals, because a fairly matured four-year-old colt is eagerly bought up by dealers everywhere.

It will also soon be found that one remount depot is not sufficient to supply the needs of our largely scattered army, and at least two more will have to be established, one in the East and one in the far West. With these remount depots in successful operation, under skillful management, we shall have taken quite a step toward better mounting our cavalry. Yet, if the history of the remount depots of some European armies may teach us anything, we shall then be slowly drifting towards breeding our own stud horses or even our own cavalry horses, for which a bountiful nature has given us better opportunities and greater facilities than any European army possesses, except perhaps Russia. The indicated result will be sure to come as soon as we have learned in our army more about the breeding and rearing of cavalry horses, a knowledge which experience in the remount depots will gradually teach us. Moreover, the selection and collection of horses by the remount depots will not be found to be above criticism by the regiments, because there will never be a time when our private horse breeders will fully understand the particular purpose of a cavalry horse, and only

by breeding for this purpose can such a horse be produced and can such a breed be established in this country.

THE QUARTERMASTER'S DEPARTMENT AND THE ARMY HORSE.

There is no department on whose efficiency and willingness depends so much the welfare of our army horses in peace or war as the Quartermaster's Department, because it furnishes in our army not only the horses but everything that pertains to their well being. In peace this department works smoothly as regards the supplies needed and allowed for horses, but in war it is not always successful in accomplishing its purpose. In the earlier Philippine campaign, just as in the South African War, our horses had no oats or hay, the food best suited for their health and labor, and they had to subsist on rice and native grass, a strange food and not always a proper one. For quite a time there were also no horseshoes, and when these arrived no shoe nails were sent with them, neither did we have at first veterinary medicines and dressings. All these are supplies that should go with the horses when they are shipped, and their issue should be kept up without interruption.

It is one of the oldest experiences of armies schooled in warfare, that the supplying of food for men and horses in the field is the most difficult task to perform. There are many instances recorded in military history where this has been evidently impossible, and the results have always been disastrous in great loss of men and horses. It is certain that we have made no great progress in the transportation in the field, and our most modern appliances, such as the automobile, give little hope of a reliable means of improvement. These machines may be of certain use in maneuvers and even in war in the old, settled countries of England, France and Germany, which possess a network of excellent country roads, but for warfare in semi-civilized or unsettled countries where good roads and bridges have not been built, they must be regarded as hopeless playthings. It is worth remembering that the commanders of smaller mounted organizations in the Philippine campaign soon learned again the value of the pack-mule, thus returning to the most ancient system of

using "beasts of burden" as practiced by the armies of Greece and Rome, by the Crusaders, by Wallenstein in the Thirty Years' War, and by Frederick the Great in the Seven Years' War in Silesia, not to forget our own constant use of the pack-mule in the Indian wars, especially in mountainous districts. The great drawback of the cumbersome transportation by heavy wagon train lies in the fear of everybody that they may get stuck in a bad road, and may not arrive in camp until after dark, if at all. All of us know that these occurrences are common. This feeling of unreliability is the cause of the overpacking of horses with articles that are not intended to be on the saddle, and which help to cause not only sore backs but a speedy breakdown of the animals. It was often a memorable sight in our Philippine marches to see the troops start out of camp with the saddle-bags extended to the breaking point with things that should not be seen, overruling the carefully laid down regulations about the equal distribution of weight of the cavalry saddle as it is packed in peace. And yet with all these "unavoidable" weights some troop commanders would wonder how their horses acquired sore backs. True, this overpacking of horses in the field is the only means at present to keep mounted troops mobile and independent, but it is certainly done at the expense of horse flesh, horse spirit and horse life.

Thus, with all the display of modern equipments, we have as yet no adequate improvement in the simple transportation of the necessities of the soldier in the field. It is for the Quartermaster's Department to devise some light, movable and reliable contrivance for future campaigns, that will unburden our over-packed horses, and keep our mounted troops serviceable for a longer period. Until such has been invented the ancient pack-mule must remain the only reliable camp follower, the only source of comfort when he promptly comes into camp with that joyful bray, the equal of which will never be heard by any soulless machine contrived by mankind.

THE PREVENTION AND SUPPRESSION OF CONTAGIOUS DISEASES.

While in time of peace the necessity for the prevention

against the introduction of contagious diseases of horses is not a frequent occurrence from the isolated location of our garrisons, the danger of infection is ever present during a mobilization and as soon as horses are transported by rail or over sea, resting perhaps here and there in corrals for short intervals. Intelligent foresight and diligent watch should then be employed, and prompt measures for the suppression of contagious diseases must be taken at once. That in our mobilization during the Spanish War, and later in rushing horses to the Philippine Islands, we have taken such intelligent precaution, must be denied. The camps at Chickamauga soon became hot-beds of glanders. At first the old, ever repeated doubt arose, whether the disease was really glanders or not, a doubt incurring the loss of valuable time for prompt action. When this doubt was overcome, then the carnage by the bullet and the butcher-knife began, whereas under the light of modern veterinary hygiene most of the horses, at least many of them, could have been saved by the intelligent use of mallein, by prompt and correct isolation, and by a thorough disinfection of the infected corrals and picket lines. Nor was any lesson learned from these occurrences. True, attempts were made at San Francisco to test the horses to be shipped to the Islands, with mallein, but this was done in a crude manner by crude men, and again many horses were killed on mere suspicion.

Whether glanders was indigenous in the Philippines or whether it was first introduced by our troops, has been a point long disputed but never definitely ascertained, but there has been a tendency to blame our officers of mounted commands for its introduction. But even if it was so introduced, it was the fault of our system, or rather entire lack of any system, to prevent such occurrence, and military officers who happened to be responsible for horses, should not have been accused for its failure to work. The only persons responsible for such matters can but be the army veterinarians, provided that they are educated professional men, and as such placed in a position where they can give intelligent counsel to the proper military authorities. This

is the only safe and correct standpoint, because it is impossible that any military officer, however experienced he may be in the care of horses in garrison or in the field, can have a correct knowledge of the specific pathological lesions of this disease which would enable him to make a positive diagnosis. This knowledge can be acquired only in the post-mortem room and in the histological and bacteriological laboratories. Of course I have met a few officers who thought that they "knew a case of glanders when they see it," but I have never yet seen one of them step up to a diseased horse to carefully examine him in order to verify his suspicion. Neither can any reliable veterinarian make a diagnosis at such a respectful distance, but he must open up the nostrils of the horse, which are often glued together by a sticky and fetid discharge, use a reflector if necessary, and take the risk of having a few millions of bacilli sneezed into his eyes or nose. How often has the writer earnestly tried to convince members of boards of survey that a horse was really diseased with glanders by opening for them the nostrils of a horse, but few officers would venture near enough to see for themselves. While such abhorrence of a deadly disease is perfectly natural in laymen, it shows that after all, these officers had to write their signature "on the best of their belief," relying on the knowledge and integrity of the veterinarian and on his opinion. As this is very much the same with some other diseases of horses, it is clear that in such crucial tests the veterinarian ought to be the responsible expert and not the military expert the responsible veterinarian.

On the whole it must be confessed with sorrow that our dealing with glanders in the Philippines was most crude, bordering on many occasions on the lowest empiricism, unworthy of an educated army. The main cause of this state of affairs was the absence of qualified army veterinarians in the early campaigns, and the hiring by the Quartermaster's Department of impostors who masqueraded under the title of contract-veterinarians, but many of whom proved to be missionaries, homœopathic physicians, wheelwrights, teamsters, and "men born and raised on the

stock ranch." Such were the "experts" given to officers responsible for horses and mules to control and stamp out an animal scourge. The result was that the disease spread with rapidity and soon assumed alarming proportions throughout the Islands. Then came the stop of the disease by order, informing us that "as a rule tropical glanders is not dangerous like its prototype in the United States and animals affected with it will usually recover with treatment. The wholesale destruction of public animals should cease." No doubt there were instances of ruthless and ignorant killing of horses by the advice of the men enumerated above, but there is also no doubt that the true, old-fashioned glanders had eaten itself deeply into our horses and mules, perhaps more so in some districts than in others. So the above well-meaning, optimistic opinion came to the afflicted as a thunderbolt, because it was so much at variance with the true condition, and could not have emanated from a thoroughly informed expert. By this time the disease was well under control in some districts, and its ultimate suppression only a question of time. This had been accomplished by the intelligent work of a few educated army veterinarians, backed by their commanding officers who had seen for themselves the ravages of the disease. But glanders had been declared under ban and it ceased at once to be heard from. No officers responsible for horses were further willing to report even the suspicion of glanders among their horses.

But heaven came to the rescue of the oppressed. All at a sudden "surra" was discovered in Manila. The news came from the "Army Pathological Laboratory," an acknowledged scientific body. This new disease had a mystic but clean name; it was not spread by the carelessness of officers and men as was the case with glanders, but "flies" carried the infection, and who can stop flies. It was a deadly disease, but as no successful treatment was known there was excuse for the dying of horses. The symptoms "resembled" those of glanders, so that "the casual observer" could make a mistaken diagnosis of glanders instead of surra.

Of course, no army surgeon will diagnose small-pox or bubonic plague by "casual observations," but the surgeons of the Army Pathological Laboratory evidently believed that a veterinarian in making a diagnosis of glanders is a mere "casual observer." So again the advice given to our military authorities was that of medical experts and not of veterinary experts. They were correct in their detection of the "parasite" of surra, but they were wrong in bringing it into connection with glanders, which is a totally different disease. But the new disease fitted the occasion admirably, because it was officially sanctioned, and supposed outbreaks of "surra" were forthwith reported from different garrisons where glanders had been rampant. Bound for God's land, the writer was thrown back for long, weary three months investigating supposed outbreaks of surra, and to stem the tide of this new disease in the minds of its converts would have killed a man with seven lives.

What should we learn from these experiences? Firstly, that in dealing with deadly contagious diseases of horses in the army, our military authorities should not depend upon half-educated veterinarians, troop-farriers and hired impostors, which is worse than relying on the redemption by a merciful fate, as done by the army commanders in medieval times. Secondly, that our general officers should be given the assistance of educated, experienced chief-veterinarians, whose duty it should be to investigate the outbreaks of such diseases and give correct and reliable information and advice. Thirdly, that instruction in veterinary hygiene be extended to all officers of the army, including those of the Quartermaster's Department and of the infantry, both of whom are so often responsible for horses and mules in the field, in order to secure their intelligent coöperation in the suppression of the contagious diseases of horses and mules and in the prevention of their unchecked spread.

The object of this article has been to paint with a few strokes of the pen some shortcomings, mistakes and oversights, which are apparent in our army, and to suggest their amelioration. The criticisms made were born of careful observation,

unprejudiced thoughts and good will. There is no army in the wide world which is perfect, even if things look well nigh perfect on their surface, and ours has certainly its shortcomings on the subjects touched upon. It is hoped that our military commanders, high and low in rank, will come to acknowledge the value of a higher knowledge and better practice of veterinary hygiene in our army, for tactics and strategy alone cannot win battles and campaigns, but they must go hand in hand with a wise appreciation of the eternal laws of nature as demanded in the hygienic care of men and horses, both of which go to make up an army in the field.

MURRAY HOWE'S EXCUSE BOOK.—Murray Howe's Excuse Book with 69 excuses, "Why He Didn't Win," is taking like hot cakes. Here is an excerpt from the work which is well worth reading: It would take a mighty big book to hold all the excuses that's ever been thought of, an' perhaps I better not write nothin' but real hot ones. I won't go farther than number 1744, but that's far enough to make a book that'll get the coin, an' get it in chunks. Right after each excuse I'll tell just how they ought to be used, like this: Excuse No. 63—Jumped-the-shadows. Never use this one on a cloudy day. No. 64—Hit-the-sulky-with-his-hocks. Never use this one when the hoss is hooked to same sulky he has pulled for two years. No. 65—Got-hurt-in-the-car-coming-over. Never use this one when your horse worked in 2:13 $\frac{1}{4}$ the day you unloaded him. No. 66—Ben-Walker-fouled-me. Don't use this one when you was last all the way around. No. 67—Blacksmith-cut-his-toes off. Use this one any time an' often. No. 68—Threw-a-toe-weight. Use this one when you are sure the boys did not forget to put 'em on. No. 69—Track-did-not-suit-him. Never use this one when all the heats are better than 2:12. I guess a book like that wouldn't put the stud book an' the dictionary an' the Bible behind the flag, would it?

COLLEGE ANNOUNCEMENTS RECEIVED.—We acknowledge the receipt of the announcements for 1904-05 of the following veterinary colleges: New York-American, New York State, Kansas City, Chicago, Ontario, Indianapolis, Iowa State, Ohio State, San Francisco, and Laval.

WHEN TO OPERATE.

BY L. A. MERILLAT, V. S., CHICAGO, ILL.

A Paper presented to the 41st Annual Meeting of the American Veterinary Medical Association at St. Louis, Mo., Aug. 16-19, 1904.

The dearth of so-called "popular papers" presented at these meetings is a mere condition of circumstances and not the will of the few, as is so frequently intimated in heart-to-heart talks with members of the Association. The capable writer finding it distasteful to present a paper here that does not compare favorably, from a scientific standpoint, with those which delve deeply into the realms of mystery and are adorned throughout with high-sounding technical terms, leaves the task alone and comes to the meetings year after year to hear only the years' revelations of the field and laboratory. He goes home proud enough of the progress of his profession, but without additional knowledge as to his daily vocation. Furthermore, the selection of an appropriate subject is a perplexing problem to the practitioner. The discussion of generalities or history would be only a repetition of matters of common knowledge to the profession. Specialization on any one disease or operation, in the absence of new acquisitions, is but a dry, uninteresting reference to details that should be made to reach the profession through other channels, the lecture room, the professional journal, the college bulletin, the local veterinary society or the text-book. The practitioner feels that the valuable moments of the Association cannot be spared to the disbursement of details that are impossible to retain in the memory and that would interest but few. General thoughts and discussions in surgery are probably intensely interesting and instructive even to the layman, but special topics interest the surgeon alone. The deliberations of a surgeon among surgeons excites the greatest attention, but the deliberations of a surgeon among physicians and sanitarians always fall flat, and might be likened unto a shoemaker describing his craft to an association of college professors. His audience might applaud his general remarks on the shoe industry,

but would yawn at his most crucial effort to describe the making of a shoe. Hence the unpopularity and scarcity of the "popular paper."

This paper is not presented with the intention or expectation of presenting any new ideas, but more for the purpose of referring to the grave dangers of "the knife" as a therapeutic weapon when applied promiscuously and without a most scrupulous regard for the selection of proper indications.

In approaching the subject of surgery two propositions are encountered: the first, "When to Operate," and the second, "How to Operate." The first involves the science of surgery, and the second the art. The first embodies knowledge of disease processes and sound judgment in diagnosis plus an abundance of strategy and common sense. The latter requires manual dexterity, mechanical ingenuity and skilful manipulations, all of which are useless attainments without a knowledge of the proper time and opportunity to apply them. In view of the crudeness and grossness of the veterinary surgical operations, and the ever present opportunity the veterinarian has to learn surgical technics, the proposition of "How to Operate" does not stand in the way of rapid advancement in veterinary surgery. Observations from a teacher's standpoint have constantly revealed to me the fact that veterinary surgical operations are readily mastered by students. A little manual training on incisions, dissections and hæmostasis, followed by exercises in the various operations that occur in the routine of practice, readily transforms a whole class of students from novices to very creditable operators. So simple is the art of veterinary surgery that any enthusiastic student who applies himself diligently for a brief period of manual instruction, soon reaches an admirable degree of perfection. It has been further observed that such a student does not always become a good surgeon, although he has admirable attainments in the art of surgery; secures his patients well, masters them perfectly, administers the anæsthetic with confidence, and then carries out each step of the operation with perfect precision, the results are too frequently a disappointment,

from his deficiency in the solution of the proposition "When to Operate." A good operator, especially an enthusiastic operator, is seldom a good surgeon, while the awkward operator with a better judgment of the proper time to operate, usually evolves into a good surgeon of great and lasting reputation.

The wild enthusiasm for surgery that ran riot in the medical profession a few years ago has now given way to its more conservative application, and as a result human surgery has reached the high plane it now occupies. Should veterinary surgery follow the same course, the transformation toward conservatism should come early if we profit by the lesson taught us in the history of human surgery.

This is the day of surgery; the laity is alive to its possibilities and its importance; the live-stock interests of the country demand its application more and more to the diseases which medicants have failed to conquer, and much better recognition is given the veterinarian who operates well, than to the one who avoids surgery. But may not these high-sounding notes of encouragement prove its undoing if more attention is not paid to its proper application? From the writer's point of observation it is very evident that the immediate future of veterinary surgery will be largely in the hands of the new recruits into the ranks of the profession, who have very high attainments in the art of cutting neat holes into the bodies of animals, but who, owing to the deficiency of their professional training in the science of surgery, will not utilize the art to the best advantage.

Granted then that the simple proposition of "How to Operate" had been well mastered by the members of the profession and that our greatest difficulty lay in the selection of proper indications, along what line should we exert ourselves to bring the greatest credit to the surgical branch of veterinary science? It is very evident here that the perplexing problem of diagnosing surgical diseases is the principal obstacle in the way of reaching logical conclusions as to whether a disease is amenable to surgical treatment or not, and that it is in this direction we should seek more light. Diagnosis, besides being a seemingly

impervious wall across the path of progress in veterinary surgery, is also a neglected branch of our learning. The obstacle must be surmounted by better education of our members in all the sciences which appertain to veterinary medicine. We need as fundamental learning, to lead us to and through the desired goal, better general education, and longer and better curricula in the professional school. We need more botany, zoölogy, biology, chemistry and physiology to broaden the mind and to give the student a better understanding of the domestic animals, their habits, nature, capabilities and idiosyncracies, as a basis upon which to build the study of pathological processes. The exaction born of a desire for betterment of our craft should lead all members of the profession to join hands in the effort for higher education and higher attainment in the sciences taught in the veterinary school.

First, I would warn the surgeon against error of speaking lightly of the dangers of surgical operations. Assurances that "there is absolutely no danger" in any given surgical operation is a display of poor diplomacy, as the element "danger" is ever present in surgery, and, besides, such expressions are deceitful and may even be regarded later as a cunning method to gain permission to apply surgical treatment. To protect a surgical operation against condemnation, the inevitable dangers and sequelæ require elucidation as well as the advantages. A frank admission that 1 per cent., 2 per cent., 5 per cent. or 25 per cent. of a given procedure are failures or fatal always makes a mighty convenient post-mortem refuge. Patients have died from hæmorrhage following the extraction of a tooth; from septic infection following the ablation of a small tumor; from the application of local and general anæsthetics; from heart failure produced by the mere application of a twitch to the nose; from internal injury, fractures and strains incident to surgical restraint, etc., etc., *ad infinitum*. It is therefore evident that the veterinary surgeon, in justice to himself, has a very important duty to perform in this connection before resorting to surgical intervention. This warning does not signify that these dangers

should be emphasized, magnified, or elaborated upon unnecessarily, yet when an important operation is contemplated it is our plain duty to forewarn our client, as well as forearm ourselves, and abandon the custom of referring to surgical operations as trivial affairs. To operate only when our clients are aware of the inevitable dangers of surgery is the first lesson this paper aims to teach.

Second, I next desire to emphasize the importance of subjecting surgical patients to a perfect, methodical physical examination at the time of diagnosis as well as at the time of operation. To operate upon a patient without regard to age, sex, disposition, temperament and condition of the vital organs is a sin of omission that will lead to a large percentage of unfortunate circumstances. No patient must be led to the operating room for even a simple operation before a physical examination is made, as such examinations and investigations frequently reveal conditions which necessitate a complete change of method or even postponement of an operation, and, besides, the precaution cultivates method and circumspection, which are two valuable traits for a surgeon to possess.

Disregard for the surgical patient's age may result in the fracture of the spinal column in the aged animal or an epiphyseal separation of the femur in the very young animal. Neglect to note sex may result in abortion in the pregnant female or augmentation of an over-looked hernia in the male. The surgeon's personal safety as well as the patient's well being demands a consideration for the disposition and temperament. The full stomach, the distended bladder, the asthmatic lungs or the abnormal heart's action are conditions demanding due and timely consideration. The full stomach and bladder are seldom ruptured in a surgical operation but the distress caused by firmly securing animals in that condition augments shock, interferes with the heart's action and frequently produces violent colics; and the administration of a general anæsthetic under such circumstances is a fool-hardy act on the part of the surgeon as it is hazardous to the patient.

The following is an enumeration of a few kinds of animals in which surgical operations are attended with more or less danger :

1. *The Nervous Old Horse.*—The old horse that will offer violent resistance to the necessary restraint should always be an unwelcome guest in the operating room. Such an animal will usually inflict upon itself some injury to the locomotory apparatus and will always arise from a prolonged operation in a frightful state of surgical exhaustion.

2. *The Idle Horse.*—Idleness for a few days preceding an operation may result in an attack of azoturia as the operation progresses, and protracted idleness especially in fat animals creates an obesity of the internal organs from which an experienced surgeon will shrink. The administration of anæsthetics in such animals yields a large percentage of fatalities and prolonged painful operations ; without anæsthesia produce distress, shock, heart failure or colics, to which not a few will succumb.

3. *The young horse or ox* between the age of six months and two and a half years when restrained with more or less freedom of the hind extremities will occasionally separate the diaphysis from the epiphysis of the femur or tibia.

4. *The "heavy" horse, the "roarer," the "dummy,"* the horse that never lies down, the horse having osteophytes on one or more articulations, and the fat aged dog should not be omitted among the unwelcome surgical subjects.

These recommendations are as old as veterinary surgery itself, but are of sufficient importance to merit constant repetition. They are referred to here as the second lesson this paper aims to teach ; namely, to operate only after subjecting patients to a rigid physical examination.

Third. I desire as a third recommendation to emphasize to the importance of respecting our client's financial interests, which owing to the commercial nature of our calling has an important bearing on the proposition of "When to Operate." I would first admonish the surgeon against the too free recommendation of operations having a high rate of mortality. While

recognizing the fact that serious capital operations occasionally bring great credit and notoriety, the final results of resorting too freely to such operations is always disastrous to a surgeon's reputation and detrimental to surgery as a whole. The custom of resorting to surgical intervention as a last resort when medical treatment has failed and the patient is in a dying condition, is an injustice to surgery and is always a display of mighty poor strategy. To incur the expense of a costly capital operation when a patient is in a dying condition, with no possible chance of recovery, warrants the condemnation such an undertaking usually receives. Again, operations that are knowingly unprofitable must be avoided. To gain favor for an operation, its cost plus the expense of the period of convalescence must be taken into account. The surgeon in this connection is at a disadvantage over the physician, because positive results are expected of surgery and the surgeon is expected to know the outcome of his operations, while the physician may continue to "dose away" indefinitely without censure. Finally we would advise against the application of operations in which success is the exception and not the rule, to avoid new, untried procedures described from time to time in current literature by over-zealous writers and to adhere strictly to those procedures that have been tried and found worthy and which may be defended as the usual and customary form of treatment of the disease to which they are applied. Experiments should be left to the teacher or performed upon worthless subjects, and only operations that are profitable to our clients should be adopted in the routine of practice. "So endeth the third lesson."

With the universal observance of these general recommendations which should be obeyed in each and every surgical operation, the further consideration of our title must deal with the diseases and operations themselves. As procrastination is both a virtue and a vice in surgery, the answer to the question "When shall we operate" will vary with and in each surgical disease, but since this paper cannot cover the entire field of surgery, only a few diseases and operations will be submitted. These are

selected on account of their importance, frequency of their occurrence, or recent adoption.

PNEUMONIA.

Ordinarily, pneumonia is not found in the category of surgical diseases, and so far as the lesion itself is concerned, it does not deserve such classification. Necrotic sections and abscesses in the human lung are now freely assailed by surgery, but in the horse the anatomical arrangement of the thorax prevents such intervention, and in the other domestic animals other obstacles intervene. The purpose of referring to pneumonia here is to revive the old treatment of blood-letting for this fell affliction. The revelations of the past few years have shown the utter helplessness of the physician in the treatment of this disease, and that the pneumonia patient must sink or swim on his own vigor. In view of this fact and the continued prevalence of pneumonia throughout the world, all manner of treatments have been attempted in the human hospitals, among which is blood-letting. The operation is not performed with the old object of curbing the disease in the early stages, but to relieve the heart's labor in the later stages. Its application in the horse has revealed the fact that it has at least nominal value when applied under proper circumstances. It is harmful in the first stages of any pneumonia and throughout the entire course of broncho-pneumonia. Its indication is the later stages of croupous pneumonia, where the patient is threatened with death more from a failing heart than from the pathological lesion itself. The unilateral case, involving an entire lung, or the bilateral case, involving about one-half of each lung, near the eighth day of the disease approaches a description of the proper indication. From one to two gallons of blood is extracted from the jugular vein, after which the heart takes on new vigor, the respirations become less labored and the temperature drops several points. The operation is based on the principle that the volume of blood of the pneumonia patient is too great for the diminished lung capacity, and is therefore only a burden to the heart. It is claimed that if the volume of blood could be diminished as the lung capacity

becomes more and more limited the mortality of uncomplicated croupous pneumonia would be materially lessened.

PERIODIC OPHTHALMIA.

Recent revelations in the etiology of specific ophthalmia have placed it within the field of surgical treatment. It is mentioned here because it is another disease that would not have been thought of in surgery a few years ago, and because it is one of the very important conditions encountered by the veterinary practitioner. The surgical treatment of this disease consists of the simple evacuation of the aqueous humor by puncturing through the cornea at its inferior margin. The proper time to apply the operation is after all the inflammation of an attack has subsided, and never during the course of the inflammatory process. In lenticular adhesions or opacity of any of the transparent ocular organs the operation is of no value, its object being to prevent such structural changes by evacuating the purulent matter that precipitates to the floor of the anterior chamber after each attack. The same operation performed at the superior aspect of the corneo-sclerotic margin is of little value. If the operation is performed at the inferior aspect of the cornea, when the inflammatory process has subsided and before there is any structural changes in the globe the results are satisfactory.

FISTULA OF THE WITHERS, POLL-EVIL AND QUITTOR.

These three refractory diseases are taken together because of the similarity of their nature as well as the similarity of their surgical treatment. They consist of intense infective inflammations and are refractory to treatment because of the poor nourishment of the structure primarily involved and the anatomical peculiarity of their locations. In the early years of our surgical career it was our habit to postpone the surgical treatment during the first stages, or, in other words, while they were being transformed from abscesses to fistulæ. The habit of applying palliative treatment, which is widely practiced in the profession, we have found is productive of much harm, in permitting a wider dissemination of the purulent secretion. The very

evidence of a painful swelling in the poll, withers or quarters should be met with a bold incision to and through the forming necrotic centre. It is remarkable how frequently such a course will reveal a slough of the supraspinous ligament, ligament nuchæ or lateral cartilage, which when removed will cut short the disease to the brief time required to heal a simple wound. Procrastination in these diseases is always harmful, while immediate surgical treatment frequently brings prompt relief.

CONGENITAL LUXATIONS OF THE FEMERO-PATELLAR ARTICULATION.

This abnormality is a disease of the young, occurring shortly after birth. A per cent. of patients thus afflicted recover satisfactorily with hygienic and dietetic treatment, while others retain the impediment through the early months of colthood and even to maturity. Surgical division of the internal straight ligament of the patella is a perfect cure for this condition and should be applied as soon as it becomes evident that there will be no prompt spontaneous recovery. This operation originated with an Italian veterinarian, whose name and connections I have forgotten. It was condemned as a dangerous operation by Möller and Dieckerhoff, who found it difficult to perform without wounding the secreting membrane of the articulation. The operation was introduced to the clinic of the Chicago Veterinary College three years ago, since which time several hundred experimental operations have been performed without accident owing to the adoption of a new technique, which has been described in the *Quarterly Bulletin* of that college. Three cases (they are few in city practice) have been operated upon, each successfully, and the students who have been taught the operation during the past three years have reported many cases, with no adverse results.

GOITRE.

The seriousness of goitre as a blemish to the valuable domestic animal, as well as its frequency, creates a mighty inviting subject to the student of surgery. But goitre being usually bilateral their removal has not been attempted owing to the

post-operative necessity of feeding the substance of thyroid gland to maintain the health, and owing to the great danger of primary and secondary hæmorrhage. To overcome both of these obstacles enucleation of all but a small portion of both glands is recommended. A very small portion of the gland will suffice to maintain the health. Goitre in the mature animal large enough to produce a marked blemish is the proper indication for the operation.

DENTISTRY.

We refer to dentistry chiefly to condemn the indiscriminate trimming and filing of the horse's teeth. The veterinarian of to-day, especially in America, seems to be cultivating an inclination to deal with the enamel points at the extremity of the longitudinal ridges of the herbivorous molars (sharp teeth) as insulting agents, when in fact these structures are actually a necessary part of the normal dental mechanism, serving a useful purpose. The practice of filing the teeth of all horses is as objectionable as to ignore the operation entirely, and tends to bring disrepute upon a very valuable surgical operation. In this simple procedure, as in any other, its proper application brings marked results, while its improper use brings naught but disappointment. And, again, reducing the borders of the molars to a smooth rounded condition by cutting and filing is distinctly harmful to any horse or ox. The grave dental disorders, such as decayed teeth, elongations that prevent perfect contact of the grinding surfaces and enamel points that wound or threaten to wound the buccal membrane, alone need attention. It is for such grave disorders the veterinary surgeon should search when seeking indications for dental surgery. Failure to make any marked or even noticeable impression in the condition of large stables of horses that are emaciated from hard service, poor feed and care, horses in poor flesh from hard work and yet having the best of food and stable attention, as well as horses in fair condition, is the basis for these conclusions.

ROARING FROM LARYNGEAL PARALYSIS.

After having performed many different operations for the re-

lief of this affliction during the past ten years, we are forced to admit there is no universally satisfactory surgical panacea for "roaring." The danger of making a quite useful horse useless and the great liability of recurrence of the roaring one month, three months, six months or even a year after operating, are the bans on the operation for laryngeal paralysis.

With us operations for roaring are successful only in animals above the age of ten years. The operation giving the best results is ablation of the anterior half of the left arytenoid cartilage and vocal cord. In young animals any operation that requires considerable cutting of the larynx will sooner or later prove disastrous, from constricting cicatrization of the wounded mucous membrane, distortion of the cricoid cartilage, from a general productive perichondritis, or from a combination of all three. Our advice to the veterinarian in this connection is to avoid patients under the age of nine or ten years unless they are absolutely worthless and to operate with some confidence upon the aged ones.

ŒSOPHAGEAL OBSTRUCTION IN THE HORSE.

For the choked horse that has failed to yield to the usual forms of palliative treatment we have recently adopted the following treatment: A stomach tube of ordinary dimensions is passed to the obstruction, after which an incision is made so as to expose the œsophagus in the middle third of the cervical region. A tape is then passed around the œsophagus and tied tight enough to prevent an upward flow of fluid into the pharynx and subsequently into the lungs. With this protection water may be freely injected into the tube to dissolve and wash away the obstructive mass. The amount of pressure produced by the injected water can be felt on the œsophagus just below the tape, so there need be no danger of rupture. The operation is recommended as a last resort for the cure of choke in the horse. Its value in the other animals has not been determined. Œsophageal obstruction in the horse is usually the result of a preëxisting dilatation, the obstructing mass is oats, corn or hay, and the location is the thoracic portion of the gullet. It is therefore

evident that a probang should never be inserted for the object of forcing the mass toward the stomach, as is so frequently recommended and practiced. The palliative treatment of drenching and administration of medicines that are supposed to stimulate the œsophagus frequently fail, even after several days of diligent effort. In view of the helplessness of the surgeon at this point of the condition operative intervention is justifiable. Failures may be anticipated when the mass has become desiccated or the dilated wall has become necrotic from delaying the operation too long, but our observation to the present time warrants its recommendation in the highest terms.

ABDOMINAL OPERATIONS IN THE DOG.

Anatomically, the larger domestic animals are not suitable subjects for the abdominal operations which expose to view the internal organs, and it is very evident that so far as the non-ruminating herbivora is concerned such operations will be slow to gain favor. Although the indications for such operations are legion it is even feared we shall forever be denied their application. In the dog, however, we are justified in transgressing freely upon the abdominal organs, and the veterinarian, who is also a surgeon, should not overlook the possibilities in this connection. The dog with its disposition to ingest solid bodies, such as marbles, coins, balls, corks, sponges, etc., very frequently presents to the good diagnostician a very beautiful subject for an intestinal operation, and the success with which these operations are carried out by veterinarians is indeed gratifying. Laparo-hysterotomy (cæsarean section) is also gaining much, favor with the practitioner among dogs, not because it is being performed better, but owing to a more scrupulous consideration for the proper time to operate. The keynote of success in these operations is early intervention. Delays are dangerous. We have found that cæsarean section on the non-septic uterus has a very low mortality, while in the septic cases recovery is a rare result. To resort to such operations only at the last moment, when there is no possible chance of recovery, is doing an injustice

to the procedure, but timely intervention will bring to the surgeon, as well as the profession, the applause which the successful execution of an operation, requiring accurate knowledge of modern surgery, always brings forth. The abdominal operation has been the making of human surgery, which admonition should teach the veterinarian to seek its indication in the small animal and to endeavor to overcome the obstacles preventing its application in the larger ones.

NEUROTOMY.

A better understanding of the distribution of the sensory nerves of the horse's extremities has been the means of adding a number of more or less valuable surgical operations to the field of veterinary surgery. Plantar neurotomy has been practiced to a limited extent for about three generations, and digital during one generation, while the others, median, ulnar, tibial and peroneal are more recent acquisitions. A lucid explanation of the proper time and opportunity to apply each of these operations would require detailed consideration of each disease they are intended to relieve, which would be impossible in a brief space. We can only hasten to reiterate what this paper has aimed to teach throughout, that scrupulous attention must be given to the selection of proper indications so far as our deficiencies in the art of diagnosis will permit. In the practice of neurotomy this warning needs special emphasis. The veterinarian who will persist in applying such operations in the absence of some degree of certainty as to the diagnosis or to the well known contra-indications will soon meet with disappointments and disasters without number. The use of each of these operations for some years has taught us the impressive lesson that conservatism is indeed a blessing in surgery, and especially in neurotomy. Recent or acute inflammations or severe lameness of a chronic character are always contra-indications for neurotomy, and the surgeon should never permit himself, under any circumstances, to yield to the desire for a hurried cure of such conditions. And, again, extensive structural changes as occur in laminitis, diffused tarsitis, ringbone and sidebone, and

osteophytes that transgress upon ginglymoid articulations without mechanically obstructing the motion are equally dangerous conditions. The true indication for neurotomy is the *trivial disease*, producing a *trivial lameness* in a horse having but a *trivial duty* to perform. This suggestion must be the basis upon which to select the indications for neurotomy, and while it may be deviated from in accordance with the surgeons' judgment of each case, the nearer one remains to the suggestion the better will be the results.

THE CLINICS OF THE A. V. M. A.

Being an admirer of veterinary surgery, a believer that it is a useful part of the world's knowledge, and an ever willing assistant to its advancement, I cannot refrain from taking advantage of this opportunity to condemn the surgical clinic of the American Veterinary Medical Association, chiefly because these clinics are not a fair presentation of the highest standard of American veterinary surgery. In justice to surgery, in justice to the surgeon, and in justice to the Association they should be abandoned or conducted on entirely different lines. Such amphitheatre demonstrations in the art of surgery are only of nominal value under the most favorable conditions. Here their value is nil. The very best argument in their favor is that they at least give a general impression of the operations performed. But the American Veterinary Medical Association should not stoop to dispense fundamental knowledge that should have been acquired in the early years of the college curriculum. The member of this Association who is incapable of performing this or that operation will add nothing to his deficiency by occupying a seat at these exercises. They excite the greatest curiosity, but they do not instruct the unlearned, the purpose intended of them. The A. V. M. A. is a fair representation of the American veterinarian. Its surgical clinics should therefore represent the standard of American surgery, before its stamp of approval is placed upon them. The influence of the A. V. M. A. is essential to the progress of surgery in America, but this influence must not be exerted without method or purpose as at present,

but in a manner to bring the desired results and at the same time reflect credit instead of discredit upon the surgical branch of the profession. If the A. V. M. A. is bent on satisfying the thirst for surgical knowledge by giving practical demonstrations it might do worse than leave the matter in the hands of a committee of surgeons who would be competent to decide as to their appropriate scope and character. Such a committee could be depended upon to report the year's revelations in surgery and to illustrate their report with instructive practical demonstrations that would represent the highest standard of the art of veterinary surgery as practiced on the American continent by the American veterinarian.

THE HORSE has another enemy in Chicago. This time it is the pneumatic tube. On Aug. 25 more than 100 horses were laid off in the mail service and the mail will be sent to the various depots by the tube route.

THE LEGISLATIVE COMMITTEE of the Michigan State V. M. Association are working very intelligently and earnestly to prepare for the pushing of the proposed veterinary Sanitary law, and are already sending out literature, and urging its members to interest all legislators and would-be legislators in it—with a view to having them pledged to its support when the Legislature meets.

DR. WM. SHEPPARD, of Sheepshead Bay, N. Y., suffered a serious accident about the first of August in being kicked in the temporal region by a thoroughbred upon which he was operating. He was firing the back tendons of a front leg, when the colt kicked sideways with a hind leg, striking the doctor squarely in the temple. He was unconscious for some time, and afterwards suffered from deafness and great pain in the ears. We are glad to announce that he is making a good recovery.

DRS. V. A. MOORE and Wm. Henry Kelly, of New York, have gone to Lethbridge, Can., to study *maladie du coit* on behalf of the Commissioner of Agriculture. Some two hundred affected animals are to be slaughtered by the Canadian Government, and Commissioner Weiting has very wisely sent representatives of the veterinary profession there to familiarize themselves with the clinical symptoms and bacteriological characters of the disease, so that should an invasion ever occur in his commonwealth its identification could be readily accomplished.

“NERVOUS,” “STIFF-LEGGED,” OR “FAINTING” GOATS.

BY DRS. GEO. R. WHITE AND JOSEPH PLASKETT, NASHVILLE, TENNESSEE.

Several months ago, we were called to the well-known Ewell Stock Farm, Spring Hill, Maury County, Tennessee, to see the famous pacing stallion, John R. Gentry. While there, our attention was called by the proprietor, Mr. George Campbell Brown, to a peculiar breed, or species of goat, known throughout this section as “Nervous,” “Stiff-legged,” or “Fainting” Goats.

We had often before heard of such animals, but up to that day had considered it either a joke or superstition. However, upon this occasion we were convinced beyond the shadow of a doubt, that such goats do exist, as their owner required them to “perform” for our special benefit. They were to us very amusing as well as interesting “freaks” of goatology. So much interested were we in their behavior that Mr. Brown, upon our request, shipped to us by express a pair, in order that we might acquaint ourselves more fully with them.

These goats have been kept in a box-stall of the Nashville Veterinary Hospital for the past six months, which has afforded an excellent opportunity to observe their behavior.

After careful observation and painstaking investigation, we are convinced that this is a new breed of goat, worthy of note in American literature. The history of this unique goat is somewhat indefinite, and as to exactly how they originated, we are not certain. However, so far as we have been able to determine, the breed was first seen in the southeastern part of Marshall County, Tennessee. At the present time there are a few of these goats distributed over Marshall, Giles, Lawrence, Maury and Coffee Counties. Mr. George Campbell Brown has a herd of thirty-five. We do not believe there are more than seventy-five or one hundred of these goats in existence at the present time.

At a casual glance under ordinary conditions they appear to be just ordinary "billies" (illustrated by photograph No. 1),



No. 1—A typical specimen of the "Nervous," "Stiff-legged," or "Fainting" Goat, which, until frightened, appears to be just an ordinary "Billy."

but upon the least excitement the picture changes. Closer acquaintance reveals the fact that they possess a most extraordinary characteristic. They are easily frightened, and to simply "boo" at them will cause them to fall helplessly to the ground and remain there until the spell leaves them (illustrated by photograph No. 2). They scare and faint upon the slightest



No. 2.—This photograph shows the same goat after being frightened. The picture has changed and the goat lies in a state of tetanic convulsions until the spell leaves him.

provocation. The mere effect of jumping over a fence or bar over 15 or 18 inches from the ground, is sufficient to cause them to become stiff and "faint" (illustrated by photograph No. 3).



No. 3.—This photograph shows the same goat attempting to jump a bar which is only fifteen inches from the ground.

When under these spells they can be approached, turned over and dragged about just as if they were dead. They become so rigid and stiff that they can be lifted bodily without bending. So far as we have been able to determine, the animal retains full possession of its intellectual faculties throughout this peculiar manœuvre, but they have that pathognomonic expression indicative of fright, anxiety, and, we might say, agony. The symptoms simulate those of tetanus or strychnine poison. They become stiff and rigid, totter and fall to the ground in tetanic convulsions, the duration of which varies from ten to twenty seconds. At this time there is protrusion of the eye-balls, which give them a "bucking," wild, staring appearance. Associated with the above we have general rigidity of all the

voluntary muscles. Contraction of the cervical extensors causes a straightening of the head, hardness of the muscles of the neck to the touch. Upon the back, loin, and croup the muscles are as hard as wood. On account of the spasmodic contraction of the muscles of their legs, their flexion is impossible.

Dyspnœa in an aggravated form occurs; in fact, on several occasions we have noticed temporary cessation of respiration entirely, on account of intense rigidity of the abdominal and thoracic muscles, associated with fixidity of the diaphragm and spasm of the glottis. The heart muscle, although it is involuntary in character, must certainly respond in some manner to the same stimulus of excitement which affects the voluntary muscles as the pulsations during the attack are fast, hard, small and irregular. They lie on their side for fifteen or twenty seconds in a state of opisthotonos before recovering sufficiently to again rise to their feet. After getting up they stagger and walk off with their legs stiff, rigid, and spread wide apart. The gait at this time resembles that of a horse suffering with tetanus; after they have gone twenty or thirty feet the symptoms disappear, and they have the appearance of any ordinary goat, none the worse for the ordeal through which they have gone. It is said that, in rare cases these goats have been known to be frightened to death; this is very rare, however.

At this juncture we will state that a kid has been born since these goats have been under our observation, and it presented all the characteristic "nervous" and "fainting" symptoms of its parents before it was three hours old.

The histological and anatomical changes in the motor nerve centres and trunks, we are not in position to explain, as such would be impossible in the absence of an autopsy. The excitement causes overstimulation of the motor nerve tracts, which after fifteen or twenty seconds subsides into the normal condition.

The reasons for such a peculiarly high developed nervo-muscular system, we shall not attempt to explain, suffice it to say that this trait of action has become so well marked, and so

thoroughly established that we are justified in classing this animal as a new, separate and distinct breed, since uniformity has been established; the general principle that "like produces like" holds good with this breed.

It has long been an axiom that the physical as well as the mental and moral peculiarities of the father and mother, are visited upon the children of, even beyond, the third and fourth generations, so it is that this established characteristic is uniformly transmitted by heredity from the father and mother goat to their offspring.

After most diligent inquiry, we are unable to trace a single case where atavism has taken place.

The advantage of this goat over the common goat is, that it can be kept in prescribed grounds.

THE EMPRESS OF CHINA has for the first time publicly recognized the medical work of the Protestant Missions by subscribing money for their medical college.

IN the stable trained by Scott Hudson there was at the beginning of the season a mare called Italia which showed great speed, but would jump up and run when there seemed to be no reason for it. At last a skilful veterinarian was called to examine the mare and promptly stated that her vagaries were caused by a well-defined affection of the heart. The action of the "pumping machinery" was found to be so irregular that the mare will be or has already been sent home for a long rest. —*Breeder's Gazette*.

IN the feeding experiments conducted at Loveland, Col., jointly by the United States Department of Agriculture, the Colorado Agricultural College and the Great Western Sugar Refining Co. in feeding beet pulp to steers with and without grain, it is shown in a recent bulletin that the steers fed pulp, alfalfa and oats and barley made a net profit of \$12.55; those fed pulp, alfalfa and ground corn, a profit of \$15.45, and those fed pulp and alfalfa alone, a profit of \$16 per head. The last named drove weighed the least, sold for the least, and shrank the most, yet yielded the greatest net interest on the investment, and quite enough to prove entirely satisfactory. Their gain in gross was 284 pounds in 25 weeks, the shrink 44.1 pounds, and the price in Denver \$5.15.

REPORTS OF CASES.

"Careful observation makes a skillful practitioner, but his skill dies with him. By recording his observations, he adds to the knowledge of his profession, and assists by his facts in building up the solid edifice of pathological science."

DENTIGEROUS CYST.*

By J. P. FOSTER, V. S., State Veterinarian, Huron, South Dakota.

In making a report on surgery, it has been the custom to relate some of the more recent operations as described in veterinary literature. But, as I know that a majority of the members of this association are subscribers to one or more veterinary journals, I will not at this time discuss matters already familiar to them in the records of various operations made public since our last meeting, but will confine myself to the description of a case that I consider quite interesting.

A bay mare, four years of age, of trotting breed (granddaughter of Moody, 2:18½), was brought to me for treatment of a fistulous opening situated at the antero-external part of the base of the right ear. This condition had existed since the animal was a yearling and had been treated by a number of empirics in the attempt to "eat out the pipe," as one of them expressed it. The owner told me that in his opinion the trouble must have been caused by a bite from another horse. The patient from constant treatment, extending over a period of three years, had become very "touchy" about the head, and was therefore cast before much of an examination was attempted. After casting, and removing the accumulations of pus and dried exudate from the region, a probe was inserted in the fistulous opening, which was situated on a level, and about one inch in front of the inferior point of the aperture of the concha. The fistulous tract passed downward toward the squamosal bone, and at its depth the probe came in contact with a hard substance which could also be detected through the skin by manipulation, and appeared to rest upon the superior surface of the squamous temporal bone, and immediately in front of the external auditory meatus. An incision one and one-half inches in length was made downward; beginning at the fistulous opening, and extending toward the eye. Upon inserting the finger, what seemed to be the crown of a molar tooth could be plainly felt about one inch lower than the bottom of the incision.

*Presented at the Semi-annual Meeting of the Minnesota State Veterinary Medical Association, July 14th and 15th, 1904.

By inserting the molar extractors, closed (without handles attached), so that they would more easily pass through the small incision, and afterwards opening them and securely engaging the tooth, it was removed without great difficulty. The tooth approached cuboidal in form, measuring on an average, one inch in each direction. It weighed one-half ounce.

Its superior surface (crown) was considerably blackened. After removal, the shallow alveolus (about three-eighths of an inch in depth) could be easily felt in the squamous temporal bone. All portions of the fistulous tract were removed, the cavity cleaned out as well as possible, and the incision closed with three interrupted sutures, leaving room at bottom for drainage.



Since the operation, I have noticed the leading article in the *AMERICAN VETERINARY REVIEW* for June. This article, illustrated by admirable cuts, is from the pen of Prof. W. L. Williams, of the New York State Veterinary College. As near as I can determine, the case reported by Prof. Williams as "Case 6," is similar to the one which I have described; with the exception that the tooth in "Case 6" was below the level of the bone (see Plate III of Prof. Williams' article), necessitating a longer skin incision, as well as requiring the use of a bone chisel. The accompanying photo illustrates the case I have described.

A RACHITIC TEXAS COLT.

W. G. Langley, M. D. V., of Dallas, Texas, contributes the accompanying photograph of a curiosity which has come under his observation. He states that the animal is about eighteen months old, and is well formed, with the exception of his fore legs. The Doctor suggests that he is probably a good subject for orthopedic surgery.



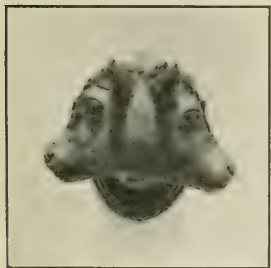
A TWO-HEADED CALF.

By H. W. BOYD, D. V. S., Nyack, N. Y.

The calf with these two heads was born on June 10th, 1904.

Two perfectly formed heads; faces at a right angle with each other, four eyes, four ears, two mouths, the lower jaws with separate joints.

The Atlas (first bone of spinal column) being abnormally large to accommodate the occipital bone, one-half being on each skull. The trachea and œsophagus, being single along the neck, divided at back of heads, one branch going to each throat. The hair is of a blue black color. Number of inches from nose to nose, $11\frac{5}{8}$.



The mother of this wonderful production of nature, is a Jersey cow, six years old, this being her third calf. Mr. Philip Bardon, of Bardonia, Rockland Co., New York, raised and owns her, and she can be seen at any time at Mr. Bardon's farm.

These heads were mounted by Messrs. Potter & Lockwood, Taxidermists, Grand View, N. Y.

ARE YOU READY FOR THE QUESTION? Question: All in favor of attending the great surgical meeting of the New York State Veterinary Medical Society at Brooklyn on Sept. 13, 14 and 15, will signify by saying Aye! Contrary, No! The Chair decides that the ayes have it by a large majority.

EXTRACTS FROM EXCHANGES.

FRENCH REVIEW.

By Prof. A. LIAUTARD, M. D., V. M.

INTERESTING CASE OF CANCEROUS ABDOMINAL CRYPTORCHIDY [*Prof. Coquot*].—This subject was an old horse which on account of left monorchidy had been brought to the Alfort clinic and left to service of the surgical practical demonstration. When the operation was being performed the first steps were gone through without difficulty. When the internal oblique muscle was punctured seven or eight litres of reddish fluid escaped. The efferent canal was easily found, but all the pulling efforts made on it to bring the testicle out remained powerless. After twenty minutes of useless attempts, the operation was given up and the animal used for other purposes—the dissection room. When the abdominal cavity was opened the cause of the trouble was found. There was an enormous mass of peculiar shape, concealed in the folds of the omentum that covered it. This mass was firmly attached to the sublumbar region and had displaced the various segments of the intestines, which were removed with difficulty. Once they were taken off, the abdominal cavity was seen extensively filled by a voluminous tumor, attached superiorly to the lumbar region and the left lumbo-iliac aponeurosis. Attached by its anterior face to the duodenum, its posterior showed a deep furrow in which the superior half of the suspensory ligament of the testicle was attached. The efferens was in its normal position, but inserted in a neoplastic formation, isolated from the other, which was the testicle. All these tumors were bosselated, and hard to the touch. The testicle weighed nine pounds and the whole sublumbar mass forty-one pounds. The microscopic examination revealed the nature of *epithelial* cancer; and yet the animal had been able to work.—(*Rec. de Med. Vet.*, Feb., 1904.)

RECOVERY OF A VOLUMINOUS CHRONIC INGUINAL HERNIA, OPERATED BY THE METHOD OF FELIZEL [*Prof. Peuch*].—A colt, aged 20 months, had inguinal hernia on the left side. It appeared when the animal was two months old, and nothing had been done. The tumor has gradually enlarged, and now is like a big udder, hangs down half way of the tibia. It grows larger after a meal, but, it has never given rise to colic. To be

sure of the nature of the hernia and of its character, the colt was thrown and laid on his back. The hernia was reduced entirely; the testicle, atrophied, was felt through the envelope; the two superior and inferior inguinal rings are felt dilated, but there is no adhesion on the walls of the vaginal sac; the hernia is exclusively *inguinal* and not complicated with eventration. The hernia can be operated, with chances of success. The animal is prepared by light diet for three days, cast, properly secured and anæsthetized with morphine and atropine, but this has to be followed by chloroform. The parts are thoroughly washed and disinfected, and the operation proceeds as follows: Having pulled the testicle down to the bottom of the envelopes an incision is made on its great curvature through the scrotum, dartos and cellular coat down to the fibrous coat. This is carefully opened to bring the testicle out. Then the envelopes are pushed upwards as much as possible, and the cord, covered with the cremaster and vaginal coat, is twisted on itself by 8 or 10 turns. A curved clamp, coated with sublimate, is applied on this funicular cord, as near the inferior ring as possible. The closing of the clamp is very difficult and cannot be made complete. The right testicle is then operated upon. The left is excised. It weighs only 50 grammes. Tetanic serum is injected, and in a few moments the animal gets up. There is no complication, except slight colics. On the twenty-first day after the operation the clamp dropped off. Recovery went on slowly and the hernia never returned.—(*Journ. de Med. Vet. de Zoötech., Feb., 1904.*)

RIGHT PELVI-CRURAL HERNIA IN A STEER [*L. Castagne*].—This lesion is difficult to diagnosticate and to cure, yet not impossible. May the following coöperate to better results: The steer one day, while being shod, struggled considerably. When returned home he is taken with very acute abdominal pains, which last all day and part of the following night, gradually becoming less violent and further apart. They are considered as simple ordinary colics, and receive an appropriate treatment. The next day and the following, however, the animal has not resumed its perfect health. He does not seem sick, but his nose is dry, there is no appetite, no rumination. He urinates and has rare motions of his bowels. He also exhibits some abdominal uneasiness, he raises his hind legs towards his belly, slowly, cautiously, without striking it, and then flexes his loins down as if he wanted to relieve himself of some pain or internal sensation. Towards the eighth day laxatives promote the expul-

sion of a clot of blood and mucus. The next day, the passages are to all appearances normal. This, however, is temporary; constipation returns, tympanites sets in, anorexia, no rumination, general prostration; death is approaching; the animal is killed on the thirteenth day of the disease. Lesions: All the stomachal compartments are healthy. The small intestine is highly inflamed, its contents are liquid, hæmorrhagic and blackish. The large intestine has few lesions. Between the first loops of the small intestine and the large, a portion of the first is seen, which through an old narrow peritoneal laceration has entered the crural ring, pushing between the atrophied testicular cord and the external border of the pelvic floor. The hernia reaches the neck of the femur, is filled with food, adherent to the surrounding parts, highly inflamed, blackish and partly floating in a small quantity of purulent liquid. The peritoneum is livid and of bad color; the muscles decomposed. It is manifest gangrene. On account of the error of diagnosis the treatment was wrong. Those recommended are: (1) rectal taxis (Cadiot and Almy); (2) laceration through the rectum of the adhesion and return of the organ in the abdomen (Ostertag); (3) section of the cord, through the rectum, so as to relieve the pressure of the cord (Zundel and Schmidt); (4) laparotomy and reduction of the hernia (Hermann and Strauss).—(*Revue Veter., March, 1904.*)

SIMPLE AND PRACTICAL WAY TO MAKE A COW GET UP [*L. Labat*].—During labor, the various presentations of the fœtus demand of the veterinarian peculiar manipulations and efforts, which may be very difficult and even impossible if the cow persists to remain lying down. To decide her to rise, the following is recommended as always successful: Have a shepherd dog or any other held by the collar, brought near the cow, towards her head. And immediately she will struggle, bend her head down and in the attempt she will make to go for the dog she will raise her hind quarters and stand up. The operator then must act quickly or renew the experiment, if necessary.—(*Progrès Vet., March 20, 1904.*)

SUBCUTANEOUS ANGIOMA CAVERNOSUM IN A DOG [*Mr. Suffran*].—Frequently observed in man, these tumors are rather rare in our domestic animals. Only a few cases are on record, one by Prof. Laulainé, who found it attached at the omentum; another by Trasbot, who saw it in the liver of a horse; a third by Prof. Montané, who met them in the endocardium of a horse; a fourth by Prof. Cadéac, who extirpated one

near the elbow joint. There are only two cases of subcutaneous angioma in dogs, one by Siedamgrotzky, who found one in the right inguinal region; the other by Lucet on the middle of the left shoulder. In the case of Mr. Suffran the tumor was situated on the back; it had existed for two months, had grown slowly, was free from adhesion, soft and painless. It looked like a cyst or a myxoma. Extirpation was indicated and carried out with antiseptic cares, by an easy enucleation. Recovery was rapid. Under the microscope the nature of the tumor was established. Sections of the growth showed that it was made of a fibrous network of fine intersections which formed alveolar spaces having all the characters of vascular cavities. The walls of these were lined with endothelium, and their cavities filled with red corpuscles, with here and there a few white ones.—(*Revue Veterinaire, April, 1904.*)

INTRATHORACIC FIBRO-SARCOMATOUS TUMOR COMPLICATED WITH ŒSOPHAGEAL ECTASY AND PLEURO-PNEUMONIA—DEATH [*L. Magnin*].—An army mare, aged eight years. When she entered the service she had a small wart on the left fore fetlock, and for five years was under treatment at various times. In October, 1902, she did her duties up to the 27th, when she entered the hospital for what was considered an Œsophageal obstruction, due to unknown causes. After a few days she was all right. She was taken again five days later, when, besides the symptoms relating to the Œsophagus, she showed manifestations of pleurisy. She was placed under treatment for this trouble; seemed to improve, but the symptoms of the Œsophagus became more severe, until finally the animal died. At the post-mortem was found in the antero-superior part of the right pleural sac, a very large tumor, irregular, bosselated, which, moulded on the right costo-vertebral groove by its superior border, rests by its inferior extremity on the sternum. It was adherent to the lung, the costal pleura and also to the Œsophagus and trachea, upon which it pressed at their entrance into the chest. The Œsophagus was filled with food from the point of pressure to its anterior orifice. It was as big as a large bologna sausage. There were two litres of yellow reddish liquid in the chest. The pleura were inflamed and both lungs hepaticized in their antero-inferior part, the right being gangrenous. The middle part of the spleen was occupied by a tumor almost spherical, of the same apparent structure as that of the chest. Both had all the characters of fibro-sarcoma.—(*Rec. de Med. Vet., Apr. 15, 1904.*)

THE PROGNOSIS IN COMPLETE FRACTURE OF THE RIBS, WITHOUT DISPLACEMENT [*F. Breton and G. Roussel*].—A Percheron mare, seven years, is hurt by a tramway. She has a deep wound of the right gluteal region, a few bruises on the legs, and a swelling on a level with the 7th and 8th left ribs. A complete fracture without displacement of the 8th rib is evident. General condition good, no trouble of auscultation. The wound of the gluteal region is dressed, and to immobilize the fracture a blister is applied. The next day the thermometer rises one degree; after that everything is normal. The veterinarian of the parties responsible calls three weeks later, and prognosticates a possible and probable recovery. December 1st, about four weeks after the accident, the mare takes walking exercise, and in coming home is suddenly taken with convulsive shaking, repeated gaping, deep dyspnoea, suddenly drops down and dies in a few minutes. Post-mortem—Lungs slightly collapsed, with manifest evidence of asphyxia. On a level with the middle third of the left lung there is a laceration of the parenchyma of the organ, which is hanging to a fibrous band attached by one of its extremities to the parietal pleura and by the other to the lung tissue. The rupture of this, besides tearing with it the pulmonary tissue, was the cause of the hæmopneumothorax, which kills the mare. Prognosis of fracture of the ribs must always be guarded.—(*Rec. de Med. Vet.*, April 15, 1904.)

BELGIAN REVIEW.

By Prof. A. LIAUTARD, M. D., V. M.

PATHOGENY AND TREATMENT OF PARTURIENT FEVER [*Mr. Hebbelynck*].—Until lately the pathogeny of this affection has been rather mysterious, and many different theories have been advanced as to its nature. Generally the uterus has called the attention, and a sympathy has been established between the general organs and the disease. For others, the phenomena of anæmia or hyperthermia of the brain were due to abnormal irritability of the uterine nerves; and, again, for others, it was the udder which might be the centre of the origin of the trouble. Prof. Gratia considers it as the consequence of the transformation of the glandular cells into colostrum. The author gives the following definition of the disease: An infection of the mammary gland at the time of parturition; it is manifested by paralytic troubles of the whole striated and

unstriated muscular system ; troubles which are the consequence of the resorption of toxines, from an anærobic specific agent, developing in the colostral sac of the organ. This opinion rests on the following observations : The disease assumes a certain degree of contagiousity ; there is a certain correlation between a bad hygienic condition and the appearance of the disease ; dirty condition of the barns and want of ventilation, promoting the pullulation of the germs. The various treatments recommended justify this theory—iodide of potassium neutralizes the toxic elements which are formed and destroys the germs which cause them. A solution, slightly antiseptic, of boric acid or bicarbonate of soda gives the same results. Air inflated in the udder has a double action ; while it dilates the lactiferous canals, it kills anærobic microbes, and instantaneously destroys the secreted toxines. The author considers instantaneous oxygenation in the most minute canaliculæ of the organ as the ideal treatment. Accordingly, he first injects a solution of oxygenated water, which he follows with insufflation of air. This treatment has given him 100 recoveries out of 100 cases. The complications of the disease are gangrenous pneumonia, gangrene of one extremity, and relapse, due to the presence of germs which have escaped the action of the medical agents.—(*Annales de Bruxelles, January, 1904.*)

RARE CAUSE OF ROARING IN A PIG [*Mr. Lienard, Veterinary Student*].—Among the swine affections where roaring can be observed, stands the "snorting disease," which by recent researches is said to be contagious, and for others is only a manifestation of rickets, osteomalacia, or osteitis. In this disease there is always swelling of the bones of the face and roaring as a consequence. The pig, subject of this report, had none of these diseases, and yet roars loud in inspiration and expiration. In closing both nostrils, the noise disappears, the animal breathes through the mouth. In closing one or the other of the nostrils, the noise is present with the same strength. The index finger introduced in either nasal cavity as far as possible reveals nothing, and is done without difficulty. At any rate, the animal is placed under observation. After three months other symptoms appear ; perhaps by intermittence the noise is less loud, but the joints become swollen, the animal keeps lying down, refuses his food ; he is slaughtered. In the left nasal cavity, near the snoot, five or six little splinters of bone are found ; they are sharp, blackish, and very irregular ; the septum nasi is perforated through, by a hole 10 centimetres square, with regular cica-

trized borders. There were lesions of broncho-pneumonia, pericardial adhesions between the coats, ulcerations of the intestinal track, etc. Roaring was due to the splinters of bone, which probably by violent regurgitation had pressed into the nasopharyngeal space and then into the nasal cavities, instead of coming out through the mouth.—(*Annales de Bruxelles, March, 1904.*)]

AN EPIZOÖTY OF SARCOPTIC MANGE IN PIGS [*A. Scholl*].—During 1901 the author had been called to attend to one of the animals of the place, when he noticed that many were scratching more or less. At first he paid little attention to this observation, but in subsequent visits, he made the same remark and finally was asked to examine the stock, in which accidents of peculiar nature had been observed—such as poor condition of the young pigs, a sickly appearance which sometimes carried them to a state of marasmus, ending in death. The examination was conclusive. A sow which had been imported five or six years previous was found with almost the entire body covered with crusts, redness, excoriation, etc., and within the ear a blackish brown secretion. In the crusts and in the examination of the secretion of the ear, *Sarcoptes scabiei* of the *scies* variety were detected. The same condition existing in the majority of the stock (that is, 160 animals), the question was important. Two indications were present—treatment of the animals and thorough disinfection of the barns. The second indication was carried out in one of the barns, the bedding burnt, the ground floor, the walls and mangers were scrubbed with soda, and sprinkled with a solution of sulphate of copper, and a coat of whitewash applied. The treatment of the animals consisted in washing, after a thorough scrubbing with soap and water, with a solution of sulphuret of potassium (1 kilog. for 30 litres of water), and then another friction with soap and water. In a few, where the lesions were particularly extensive, the ointment of Helmerich was resorted to. The animals were then placed in the disinfected barn. For security the same treatment was renewed two weeks later. That was the last of it. During the epizoöty, three cases of transmission to man were observed. In one it lasted two months. In another recovery came rapidly. In the third the disease lasted three months. In inquiring how the disease had been introduced, it was found that in 1895, six years previous, two sows of Yorkshire breed had been bought, and that when they came to the place they already had slight redness of the skin and scratched more or less. The disease pro-

gressed slowly, and it was observed that the pigs which were the most affected were those which stood nearest to these two sows.—(*Annales de Med. Vet.*, May, 1904.)

ERRONEOUS DIAGNOSIS OF TUBERCULOSIS IN A COW—ORDINARY INFECTIOUS LYMPHADENITIS [*Prof. Lienaux*].—The animal had been ailing since her last delivery, and has had some purulent discharge from the vulva. Her temperature varies between 39° and 40° , appetite capricious, respiration accelerated, heavy; cough irregular; percussion gives exaggerated resonance; auscultation reveals râles behind the shoulders; one left retropharyngeal lymphatic gland is tumefied and indurated; it is as big as an egg and painless to pressure. Examination by vagina reveals nothing. The hand in the rectum discovers a marked tumefaction of the sublumbar lymphatic glands; which are as big as the fist; they are hard and not painful. The udder is healthy and gives but little milk. Tuberculin used gives only 0.6° of reaction, but this may be due to the emaciated condition of the animal. However, in the presence of the signs presented by the respiratory apparatus, and with the condition of the two lymphatic glands, a diagnosis of tuberculosis was made. When the animal was killed for surgical exercise no tuberculous lesion could be found in the lungs; they were only the seat of extensive emphysema with the anterior lobes hepatized and showing all the lesions of verminiform bronchitis, with numerous nematods in the bronchia and trachea. All the other organs were free from tuberculosis. The two lymphatic glands whose hypertrophied and indurated condition had suggested the diagnosis of tuberculosis, only presented the lesions of a simple septicæmic nature; that of the guttural region contained many hæmorrhagic centres of various sizes; the other was swollen and its rosy structure seemed simply hypertrophied. In concluding the report, the author points out the importance there is in appreciating with great care the nature of adenitis, which in this case have had an influence on the erroneous diagnosis.—(*Annales de Med. Vet.*, June, 1904.)

GERMAN REVIEW.

By ADOLPH EICHHORN, D. V. S., Bureau of Animal Industry, Ellis, Kansas.

THE TREATMENT OF HÆMOGLOBINURIA IN CATTLE [*Evers*].—Kossel and Schutz found the true cause of hæmo-

globinuria among German cattle. The practical importance of their experiments manifests itself chiefly in the successful immunization of the cattle against the disease. Five cms. of defibrinated blood, from artificially infected animals 50 days after their recovery, is injected subcutaneously; they contract a slight affection, after which they will prove immuned for a period of at least a year. While it was thought the cause of hæmoglobinuria was due to poisonous effects of certain plants, the treatment was chiefly symptomatic. According to the recent experiments the protozoön causing the disease can be found outside of the blood, in the marrow of the bones, the spleen and in the liver—that is, in the organs which take the principal part in the formation of the red blood corpuscles. During the course of the disease a large number of red blood corpuscles are destroyed, so that they are incapable of carrying the hæmoglobin in the stroma. But the blood producing organs, with their increased activity, aim to make up this loss; in the marrow of the bones, large numbers of megaloblasts can be found, but which are unable to produce hæmoglobin. This suggested to Evers the idea to introduce hæmoglobin artificially into the system through subcutaneous injections. In 1903 he applied this method in 43 cases and of these 40 recovered. Merck's hæmoglobin is produced from the blood of different animals, but chiefly from the blood of horses. It forms a brown powder, which is soluble in water, in a 0.6 per cent. salt solution in proportion of 1:20; it can be preserved in a cool place for two weeks, while in room temperature it decomposes in 1 to 2 days. E. injected subcutaneously 15 to 20 gm. of hæmoglobin in 250.0 gm. of physiological salt solution. The solution is remarkably quickly absorbed; 10 to 12 hours from the time of the injection all the swelling disappears. By this treatment the animals recovered in 3 to 5 days to such an extent that they could have been driven to pasture.—(*Berliner Thierarzt. Wochensch.*)

TALLIANINE [*C. Augerstein*].—The author applied the ozonized terpin, called Tallianine, manufactured by Brignonnet Père et Fils and Gaubert, in the following cases, and, considering the good results he obtained, he warmly recommends the preparation: (1) An eight-year-old chestnut gelding suffered for 48 hours with laminitis. The condition gradually grew worse, so that the animal remained lying down constantly, and could only rise with assistance; 10 cms. of Tallianine were injected subcutaneously. Only with great difficulty was the

horse kept up during the injection, lying down again soon after the operation. One hour later the animal arose without assistance, placing more weight on the front legs. After the second injection of 10 cms. Tallianine all the lameness disappeared. (2) A twelve-year-old brown gelding, affected with laminitis, received 10 cms. Tallianine injected; considerable improvement was soon noticeable. After-treatment consisted of packing the hoof with a mixture of clay and vinegar. (3) An eighteen-year-old mare affected with laminitis in all four legs. The animal was very stiff, lying down a great deal, and arose only with difficulty. Four hours after the appearance of the symptoms, the animal received 0.6 gm. pilocarpine subcutaneously, which caused restlessness, profuse perspiration, salivation, etc. As for twelve hours after the injection there was no improvement noticeable, 10 cms. of Tallianine were injected intravenously; 24 hours after this injection the animal showed only slight lameness. (4) A ten-year-old brown gelding was for three days affected with lymphangitis on the right hind leg; 10 cms. Tallianine were injected intravenously, and ichthyol ointment was applied externally; marked improvement after two days, and in two more days the animal was placed in service. (5) A four-months-old foal affected with a bad case of enteritis, watery foetid diarrhoea, rectal temperature 40.2° C. Prognosis: Exitus letalis. As experiment, 10 cms. of Tallianine were injected intravenously, and Tannoform was given internally. The animal died eight hours after the injection. (8) Several young foals showed severe affections of distemper, with a bronchial affection: temperatures from 39.1 to 40.1 , appetite depraved, insensibility, the animals lying down a great deal. Every foal received in two successive days 7.5 cms. of Tallianine intravenously. The temperature dropped to normal; they regained normal sensibility, the swellings of the intermaxillary lymph glands disappeared. (9) A cow affected for six hours with parturient paresis was treated with Evers' air infusion. The condition of the animal was very serious, lying in comatose condition, with a very low rectal temperature. As experiment the author injected 10 cms. Tallianine intravenously, with the result that one hour after the injection the animal arose.—(*Berliner Thierarzt. Wochenschr.*)

TUBERCULOSIS OF MEN AND CATTLE [*Olof Stenstroems*].—Prof. Svenson with the author infected eight calves, with the sputum of phthisic patients. Three of these calves died, and the others were killed six months after the beginning of the ex-

periments. The autopsy revealed in three calves, contrary to the results reported by Koch, a severe tubercular infection, showing the internal organs and their lymph glands affected, also spreading over the serous membranes. The author states that cattle can be easily infected with human tuberculosis, but that the virulency of the human bacilli for cattle is relatively slighter.—(*Zeitschr. f. Thiermed.*)

ACTINOMYCOSIS IN THE DOG [*L. Bahr*].—In a prize crowned work, the author describes actinomycosis of the dog, in its relation to clinical, pathological, anatomical and morphological appearance. The principal results of B.'s experiments are the following: (1) Actinomycosis appears in dogs. (2) Actinomycosis in dogs may appear in the form of tumors, abscesses, or chronic fistular processes, and is often accompanied by pleuritis or peritonitis. (3) It is possible that several different species of actinomyces take part in producing actinomycosis in dogs.—(*Maanedskrift f. Dyrslaeger*.)

AN EXPLANATION OF SOME MARVELLOUS CURES.—Remarkable testimony has been obtained by the post office department as to the ways in which testimonials are obtained by some of the big concerns engaged in this business. One large firm admitted that it had agents out seeking persons who had formerly occupied prominent positions in the community, but had suffered financial reverses and were harassed by debts they were unable to settle. The agents would obtain possession of the unpaid accounts, and would then apply pressure to the unfortunate victims, demanding immediate payment in full. Finally, after long persecution, the victim would be commanded to call at the office of an attorney, where he would be given to understand that if he would sign and swear to a testimonial a receipt in full for the claims against him would be given. This seems incredible, but the facts are now on file in the records of the post office.

MORTIMER LEVERING who has just returned from Colorado where he went to join Secretary Wilson, Dr. Salmon and Prof. Carlyle on a tour of inspection of several ranches, is quoted as saying the Government is about to establish a farm for breeding carriage horses, near Fort Collins. An appropriation of \$25,000 has been made for this purpose. The officials are said to believe that horses of better endurance can be bred in the West than anywhere else.

ARMY VETERINARY DEPARTMENT.

DR. GLASSON AND THE "CURE" OF GLANDERS BY MALLEIN.

FORT ASSINNIBOINE, MONT., Sept. 12, 1904.

Editors American Veterinary Review:

DEAR SIR:—In the Army Veterinary Department of the last issue of the REVIEW appears a letter from Dr. S. Glasson, 9th Cavalry, in which he proclaims his disbelief in the "cure" of glanders by mallein, describing a case which resulted in failure.

It would be fruitless to attempt to explain to the Doctor wherein he has erred, as he has evidently gone astray on his own volition in the application of mallein, and as he has entirely misconstrued the tenor and object of my concise statistical report and the conclusions drawn from it. Moreover, he has not told us how he has performed these repeated "inoculations" of mallein, and I seriously doubt that he is able to perform them correctly.

To substantiate my doubt, it is necessary to state that I have seen him assisting in a mallein-test in 1900 at the camps in San Francisco. To his credit it may be said that he was not responsible for this outrageous performance. It consisted in driving unbroken remount-horses into chutes, similar to those in the slaughter-pens, in which they were scared into frantic efforts to retain their equilibrium and regain their liberty, and vigorously objecting to the impudence of having a thermometer forcibly introduced into the rectum from a safe place at the top of the fence. I objected at the time to such Wild-West-Circus performance, pointing out that under such inhumane restraint and hideous noise a perfectly healthy horse may run up his temperature a degree or two, and that it was totally unjustified to condemn and destroy horses under such circumstances, merely on a rise of temperature. But a civilian "Chief-veterinarian" and his "students" were engaged for this work, and there was no army veterinarian with authority to stop it. Dr. Gelston, who assisted in testing the remounts of our regiment, soon permitted himself to be persuaded to make the injections and temperature tests under ordinary restraints, and the reactions in our lot of horses at once became so few in comparison to those of the other lot as to be most pointing.

This was only an ordinary mallein-test to ascertain the extent of infection. What about the "repeated applications of

mallein," which entail such a great amount of careful, painstaking work, and of minute observation and considerate conclusion? I for one don't believe at all that Dr. Glasson succeeded "*in one particular case in allaying all the objective symptoms of glanders; that the characteristic nasal discharge ceased; that the ulcers disappeared from the Schneiderian membrane; etc.*" Heaven only knows what that case was!

With such exclamation rather than explanation, I beg to be excused from further comment. There is no "cure" for glanders by mallein, nor by any other means of which we know at present, if a case has once developed to such an extent as to be discernable by ocular examination. OLOF SCHWARZKOPF.

THAT WONDERFUL HORSE.—*Berlin, Aug. 13.*—Wilhelm von Osten, who has for a long time made investigations of the intelligence of animals, has reached results in educating an Orloff stallion that causes amazement among scientific men and psychologists. Some of those who have tested the mental powers of the animal are Dr. Studt, the Prussian Minister of Education; Professor George Schweinfurth, the famous American traveler; Professor Karl Stumpf of the Berlin University; Professor Schillings, the naturalist, and Ludwig Heck, Director of the Berlin Zoölogical Garden. The horse, besides adding, subtracting, multiplying and dividing sums, does complicated examples in mathematics, finds square numbers, and does not simply repeat what is taught, but solves fresh problems put to him by examiners in the absence of his master. The stallion also forms little sentences, remembers them next day and discriminates 12 colors and shades, giving their corresponding names. The animal distinguishes musical tones, indicating where they are situated on the chromatic scale, and picks out discords, designating which tone to omit in order to restore harmony. The horse communicates by a system of hoof beats representing the alphabet. Professor Schillings has taken much interest in displaying the horse's accomplishments to other scientists. Dr. Studt says Herr von Osten would be burned as a wizard in the earlier ages of the world. When the exercises are prolonged the horse becomes nervous and inattentive and mistakes become very frequent. Professor von Osten affirms that the horse is as well educated as a boy who has gone to school for the same number of years, and the Professor desires that a commission of specialists be selected to take the horse under conservation for four weeks.—(*Associated Press Dispatch.*)

BIBLIOGRAPHY.

HANDBOOK OF MEAT INSPECTION. By Robert Ostertag, Professor in the Veterinary High School at Berlin. With 260 Illustrations and one colored plate. Authorized translation by Early Vernon Wilcox, A. M., Ph. D., Veterinary Editor Experiment Station Record, with an Introduction by John R. Mohler, A. M., V. M. D., Chief of Pathological Division United States Bureau of Animal Industry. New York: Wm. R. Jenkins, 851-853 Sixth Avenue.

While manuals of meat inspection have been translated and published in this country from the German, no such extensive treatise as Ostertag's standard work has hitherto been attempted. It is a very exhaustive and complete work, not only upon the abstract subject of meat inspection, but it goes deeply into a consideration of every phase and ramification of the subject. In so far as diseases which affect the wholesomeness of meat are concerned, it is a better treatise upon pathology than most of the works devoted to that specialty; in fact, there is more practical information upon the pathology of diseases falling within its scope than can be found in any work in the English language. In view of the commanding position which the subject has assumed in the United States, this work of Ostertag's, with its valuable addition by Mohler, who has presented the history and operation of meat inspection in this country, as exemplified by the Bureau of Animal Industry, should surely take its place as the standard text-book and book of reference. We doubt if Ostertag's work would have been so acceptable to the profession of America without Dr. Mohler's splendid prefix, which gives a concise but thorough statement of the present status of meat inspection in this country. The body of the work is divided into seventeen sections, and a reproduction of the headings in the "Index" will give the reader some idea of the scope of the work. Section I, general discussion of meat inspection; II, Imperial legal foundation for the regulation of the meat traffic; III, the art of butchering, including the inspection of animals before slaughtering; IV, inspection of slaughtered animals; V, normal appearance and differentiation of meat and organs of different animals; VI, abnormal physiological conditions which possess sanitary interest; VII, general pathology of food animals from the standpoint of sanitary police; VIII, especially noteworthy organic diseases; IX, anomalies of the blood; X, poisoning (intoxications), effect of odorific drugs and so-called auto-intoxications; XI, animal parasites (invasion diseases); XII, plant parasites (infectious diseases); XIII, emer-

gency slaughter on account of serious infectious diseases and meat poisoning—defective bleeding—natural death ; XIV, post-mortem alterations in meat ; XV, the addition of flour to sausages—coloring and inflation of meat ; XVI, preservation of meat ; XVII, boiling, steam sterilization and harmless disposal of meat.

Dr. Wilcox is deserving of the thanks of the profession for the excellent manner in which he has accomplished a very arduous and gigantic undertaking, for the careful and minute manner in which he has followed the German text, and for his evident desire to overcome the objection to many translations from the Teutonic tongue in the avoidance of a jumbling of English and German technicalities, making it difficult to intelligently follow the author save by the employment of a lexicon. The illustrations are very helpful to the descriptions, while their explanatory notes make the figures clear and easily understood.

Jenkins has done full justice to this important work, employing a splendid, highly-calendered white paper, a plain large type for the text and subheadings.

There can be little doubt but that the publisher and author will be well repaid by a large sale of the book.

EXAMINATION FOR MEAT INSPECTORS, BUREAU OF ANIMAL INDUSTRY.—The following circular of information explains itself: "The United States Civil Service Commission invites special attention to an examination to be held on September 14, 1904, at the places mentioned in the accompanying list, to secure eligibles from which to make certification to fill several vacancies in the position of meat inspector in the Bureau of Animal Industry, Department of Agriculture, and other similar vacancies as they may occur in that Department. All the eligibles secured from the April 19, 1904, examination have been appointed; and in view of the fact that the Commission has been unable for the past three years to at any time supply the needs of the Department, qualified persons are urged to enter this examination. The examination will consist of the subjects mentioned below, weighted as indicated: 1. Spelling (twenty words of average difficulty in common use), 5; 2. Arithmetic (simple tests in addition, subtraction, multiplication, and division of whole numbers, and in common and decimal fractions, and United States money), 5; 3. Letter-writing (a letter of not less than 125 words on some subject of general interest. Competitors will be permitted to select one of two subjects given), 5;

4. Penmanship (the handwriting of the competitor in the subject of copying from plain copy will be considered with special reference to the elements of legibility, rapidity, neatness, general appearance, etc), 5; 5. Copying from plain copy (a simple test in copying accurately a few printed lines in the competitor's handwriting), 5; 6. Veterinary anatomy and physiology, 15; 7. Veterinary pathology and meat inspection, 30; 8. Theory and practice of veterinary medicine, 30; total, 100. The last three subjects include general questions on anatomy and physiology, a consideration of the pathology of diseases in general, and such special pathology as is characteristic in the diseases common to food-producing animals. The symptoms, diagnosis, and treatment of diseases incident to domesticated animals will be considered, also the laws and rules promulgated for the regulated inspection of meats. Seven hours will be allowed for this examination. Age limit, 20 years or over. Applicants must be graduates of veterinary colleges. Those graduating prior to or during 1897 will be admitted if from colleges having a course of not less than two years in veterinary science; applicants graduating since that time must be from colleges having a course of not less than three years and have spent at least two years in the study of veterinary science in such colleges. These facts must be shown in the application. This examination is open to all citizens of the United States who comply with the requirements. Applicants should at once apply either to the United States Civil Service Commission, Washington, D. C., or to the Secretary of the board of examiners at the places mentioned in the accompanying list, for application Form 1312. No application will be accepted unless properly executed and filed with the Commission at Washington. In applying for this examination the exact title as given at the head of this announcement should be used in the application. As examination papers are shipped direct from the Commission to the places of examination, it is necessary that applications be received in ample time to arrange for the examination desired at the place indicated by the applicant. The Commission will therefore arrange to examine any applicant whose application is received in time to permit the shipment of the necessary papers."

JOKES—"There goes a doctor not one of whose patients has ever complained of his treatment." POKES—"How is that?" JOKES—"He is a veterinarian."

CORRESPONDENCE.

DR. HALLORAN'S OBSTETRICAL CASE.

WASHINGTON, C. H., OHIO, Aug. 8, 1904.

Editors American Veterinary Review:

DEAR SIRs:—In reference to Dr. Halloran's "rare obstetrical case," page 459, August REVIEW, and his final query at close of description of case, we would call his attention to Vol. XII, page 173, of the AMERICAN VETERINARY REVIEW, only asking him to remember that "three" on second line should be "five."

Yours, WM. H. GRIBBLE.

DR. KAUPP EXPLAINS SOME ITEMS CONCERNING THE RECENT
MEETING OF THE MISSOURI VALLEY ASSOCIATION.

KANSAS CITY, Aug. 8, 1904.

Editors American Veterinary Review:

DEAR SIRs:—REVIEW received to-day, and found it filled to repletion with good things.

I wish to correct an error, in the report of the meeting of the Missouri Valley Association on page 491. The directions to Dr. W. C. Langdon's prescription should have read *per orum*, instead of introduced into uterus in one gallon of water. The prescription to be so injected is as follows:

℞ Tannic acid,
Boric acid,
Zinc sulph., āā 3 iij
Hydrastin,
Morph. sulph., āā 3 ss
Aq., q. s. *ad.* qt. j
M. S. Two ounces in one gallon of water injected into
uterus once daily.

Perhaps it would be interesting to those who saw this case to know that she has made a complete recovery and has sold for \$3500, double what she had sold for while affected by leucorrhœa.

Sincerely yours, B. F. KAUPP.

WEANLING MULES have been contracted of late in the Louisville district of Kentucky for November delivery at as high as \$90 per head.

DR. B. K. DOW, Secretary of the Connecticut Veterinary Medical Association, writes that the profession in that State is enthusiastic regarding the attempt to be made at the next session of the Legislature to secure the passage of a bill to regulate the practice of veterinary medicine.

OBITUARY.

PROFESSOR JAMES BEART SIMONDS.

This distinguished veterinarian, formerly principal of the Royal Veterinary College, London, England, died on August 5, at his residence, St. John's Villa, Ryde, Isle of Wight, in his ninety-fifth year. He had been the holder of many important positions in connection with veterinary science, and we are indebted to the *Veterinary News and Bulletin* for the following sketch of his professional career: Aside from his principalship alluded to above, he was professor of cattle pathology in the Royal College. For many years he was the regular professional adviser to the Privy Council in all matters pertaining to the regulation and supervision of the cattle trade, and in this capacity was sent by the Government, in 1853, as a Commissioner to the Continent to inquire into and report upon the alleged discovery of an effective means of preventing the disease of pleuro-pneumonia in cattle. Four years later he was again commissioned to visit the continent, this time Poland and the Danubian provinces, for the purpose of observing the course of the cattle plague which was then raging there.

LEOPOLD TRASBOT.

Word has just been received of the recent death of Leopold Trasbot, honorary director of Alfort, France. It is likely that Prof. Liautard will furnish a sketch of his life and work in behalf of veterinary science in one of his early chronicles.

ART AS IT IS CRITICISED.—Jesse Lewisohn is a collector of pictures. The other day he was conversing with Robert Henri, the painter. "Art galleries and exhibitions," Mr. Lewisohn said, "are interesting places to haunt. I wish I had noted down all the old comments I have heard in them. Only last week I stood behind two young women from the country in a picture shop. One of them called the other's attention to an atrocious animal piece. 'Two Dogs; After Landseer,' she read from the frame. 'I can see the two dogs, but where is Landseer?' The other young woman studied the painting closely. 'Where is he?' she asked. 'I guess this must be one of them puzzle pictures.'"

SOCIETY MEETINGS.

AMERICAN VETERINARY MEDICAL ASSOCIATION.

The 41st annual meeting was called to order in Trimp's Hall, Easton and Grand Avenues, St. Louis, Mo., Tuesday, Aug. 16, at 10 A. M., by President Roscoe R. Bell, at which time the hall was already well filled with members, visiting veterinarians and ladies. The President referred to the cordial and very general invitations from the profession of the City and State, the World's Fair authorities, business organizations, etc., which had brought the Association to St. Louis, and then introduced Mr. Henry H. Wernse, President of the Mercantile Exchange, who on behalf of the Mayor and the organization over which he presides, extended the heartiest of welcomes to the visiting veterinarians. For the Association Dr. W. H. Dalrymple, of Louisiana, responded in well-chosen words, intimating that it might be considered that the present meeting of the American Veterinary Medical Association was a part of the great World's Exhibition, since it was a display of the wonderful progress being made in this branch of medical science, showing as large and intelligent a body of men as can be gathered by any scientific organization. He assured the host of the sincere appreciation which the Association felt in the cordiality of the welcome extended to it.

President Bell then delivered his annual address as follows :

PRESIDENT'S ADDRESS.

"Fellow-Members of the American Veterinary Medical Association :

"I have the great honor to offer to this large assemblage of members and guests the usual annual address of the Presidential office; and, while a study of those of my distinguished predecessors has shown the greatest diversity in their estimates of the character which such a paper should have, and what subjects should be treated, it is apparent that they consisted largely of themes which were uppermost in the minds of the profession at the time. The many problems which confront the profession to-day make the task of considering them in an address of this kind rather a difficult one, when it is desired to maintain its length in harmony with the splendid programme which has been prepared by the combined efforts of our members and invited guests.

"I shall therefore curtail any prefatory remarks which otherwise I might be glad to indulge in, and at once make such suggestions to the Association which a careful study of existing conditions has led me to believe are pertinent—not so much for any conclusions that I have reached, but rather that I may through this opportunity give prominence to subjects which seemed to be pressing for your earnest consideration.

"From the peculiar advantages for observation which I possess, and the opportunities I have for keeping in touch with the members of the veterinary profession throughout the country, I have been enabled to learn much of the condition of the practitioners from a practical standpoint; and it is a safe assertion to make that, as a whole, they are enjoying a more liberal patronage than they have ever received. This is particularly gratifying, since it is not the result of 'boom times,' but it is principally due to two factors: The chief of these is the quality of the practitioner himself, which has inspired the owner of live-stock with greater confidence in his ability to render valuable services, not only in the treatment of the diseases from which animals suffer, but the advice of the veterinarian of the modern school is sought upon questions of sanitation, particularly for the eradication and prevention of those animal scourges which destroy the herds and flocks of live-stock breeders and owners. This is not merely an indulgence in meaningless platitudes; but from observation, extensive reading of contemporaneous literature, interviews and correspondence, it is made evident that the educated veterinarian of character and capacity is receiving as he is deserving of the patronage and confidence of those whom he is so well fitted to serve. Through his exclusive knowledge of the many sanitary, economic and purely medical problems that confront the owners of live stock he is their logical and their only safe advisor. The second factor operating in favor of the satisfactory state of veterinary practice is the esteem in which his chief patient, the horse, is held in all localities. Although the past few years have witnessed the extensive introduction of all manner of horseless vehicles for pleasure and profit; although more dollars have been thrown behind enterprises intended to popularize the motor carriage than were ever invested in one direction in the history of the world; although newspapers subsidized by stock in such companies, or edited by faddists whose visionary powers are so obtuse that they can only see in one direction, have prophesied the extinction of the horse with a precision worthy of better judgment—I say, notwith-

standing onslaughts of all characters, the horse has steadily increased in numbers, in utility, in price, in esteem, and has made for himself a stronger and more enduring place than he has ever occupied. His test in competition with the inventions of man has been so much to his advantage that his wonderful capacities and nobility of character have established themselves more firmly than could have been accomplished by any other means.

"Although we look with complacent pride upon what we are pleased to designate 'the modern veterinarian,' we should not be allured into a belief that the veterinarian of to-day is in possession of the amount of education which is available nor the quantity and quality which he should possess. It is very true that some veterinarians who received their degrees from schools where the term was short and where the instructors were men of limited capacity, have made intellectual giants of themselves. Upon a meagre foundation their natural bent for study and investigation, and often their practical tendency in that direction have enabled them to acquire later in life what was denied them in their college days. Instances without end could be cited where men with almost every obstacle in their way save ambition and determination have risen to the highest positions in every field of human endeavor—whether it be in the arts and sciences, in statecraft, in commerce, in the victories of peace or the strife of wars. But where one conspicuous figure can be pointed to as an example of self-development, it is a struggle which the vast majority of men are unequal to. From what we know of the illimitable knowledge in medical science which may be acquired by the mind of man when properly trained and vigorously applied, it is not hard to appreciate the limited acquirements of the average mind where opportunities have been denied it—either through lack of facilities or application, or both. Such then were the opportunities of those who preceded us in the veterinary field, and it is a reasonable presumption that the next generation will regard us in the same light. It is to be wished that such may be the case for the sake of our science and the cause of mankind. It is the duty of every man to make the best of his opportunities; to aspire to the highest ideals, so that when his career is closed the world will be better for his having lived in it.

"This brings us up to the question as to whether we—not only as individuals, but as the representative veterinary organization of this Western world—are doing all that we can to elevate our profession, our art, and our science; whether we are

constantly forging ahead in all that goes to increase our efficiency, our character, and our qualifications.

"At the very foundation of all progress in a learned science is knowledge, and in the short span of human life the preparation of the mind for the great work of modern veterinary medicine must of necessity be accomplished through systematic training; and for this purpose schools devoted to specially instruct men in this science have been established. The first one in this country was founded nearly fifty years ago, and since that day they have increased in number, in the quantity and quality of the instruction imparted, as well as the length of their terms, and the general equipments. It is neither necessary nor pertinent that I should dwell upon the struggles of the pioneer schools, nor the gradual merging of many of them with universities, some of which are so endowed by the State that they no longer have to count the revenue received from students to meet their obligations. Others have the moral and educational support of endowed institutions, without receiving from them financial assistance, thus enabling the schools to impart better education to their students, but at the same time leaving the veterinary faculty to fight against poverty, which in almost any other country or any other calling would result in lassitude and indifference; but the spirit which brought us to our present estate still dominates our profession, and pride and enthusiasm take the place of dollars and cents. A third class of school is the purely private college, without affiliation or assistance from any quarter, where the income from student-fees must meet all current expenses, pay the faculty, provide a building, and yield something upon the investment. To obtain students these latter schools are in direct competition with the endowed institutions, where tuition is free, the faculty provided by the State, and the equipment furnished by the same hand. That it has been hard and nigh impossible to harmonize the educational question under such diverse and adverse conditions, is scarcely to be wondered at; it is a source of congratulation that so much has been accomplished under such circumstances. To have crushed out of existence by harsh and arbitrary rules any of the schools which struggled in an honorable manner against the tide of events, would have probably been a serious error upon the part of this Association. Its duty was, and its pleasure has been, to lift the standard by easy stages, to assist the schools by moral and material support, yet always keeping the highest ideals in plain view.

"There seems to exist a somewhat general impression at present that we are not advancing in this matter of education at the same rate maintained for the past two decades; that our machinery has become rusty, and does not move with the freedom that formerly characterized it; that there is great need of reform in the matter of the entrance examination, in greater uniformity in the length of the courses at the various schools, and in their curricula. It would certainly seem but fair and just that an American diploma recognized by this Association should be a definite quality; that the holder of one diploma should have started upon his veterinary studies with the same basic education, have passed through a similar course of instruction and final requirement as another one. But how can we accept this when the one has emerged from a school with a high entrance examination, a long and thorough course of instruction, and with a rigid competition for his diploma, while the other has been given a farcical entrance examination, a short and imperfect course, and gains possession of his parchment for the reason that he has spent the requisite number of months at the institution. Yet, if the latter but fulfils the technical demands of our elastic regulations, he is the same in every sense in our eyes.

"The great question which confronts us to-day is the harmonizing of these divergent conditions without injury to those schools which are honestly striving to lift themselves to the higher standard, and at the same time to strike a determined blow at those which have no other ambition than mercenary gain. To accomplish this, to make a more uniform standard for the American school, is the question which demands thought and action. It has been suggested that this Association exercise a censorship over the schools of the country by the appointment of a large committee to see to it that they live up to the statements in their announcements; but the statements are so miscellaneous that it may be possible for a school to fulfil the letter of our demands and yet evade the spirit of our requirements. It is to be regretted that the Association of Veterinary Faculties and Examining Boards of North America has ceased to be an active organization, for through it the very questions which now seem so difficult of solution could be discussed and settled. It is the logical tribunal to harmonize these irregularities. I am impressed very forcibly with the conviction that our greatest and most urgent need is uniformity in the qualification of the matriculant; that this reform can best be brought about

by a reorganization of the Association of Faculties, with the co-operation of the A. V. M. A., which latter could elect certain of its membership as delegate-members of the Faculties Association; and it might be possible by the mutual interests represented that censors of the schools could be selected by this affiliated Association. That being accomplished, it would then become possible for the Association to *know* that colleges whose graduates are recognized by it fulfil their obligations.

"It is to be hoped that the present meeting will take some steps looking to the solution of this important problem.

"The international character of our Association is illustrated and emphasized at this meeting by the wide distribution of our essayists, for you will observe by reference to the programme that the authors of the papers to be presented represent many lands—Germany, France, Canada, the Philippines, and from every quarter of the United States. The subjects treated of also represent every phase of veterinary science, so that every member and professional visitor will find something which directly appeals to him, no matter in what field he may labor. The American Veterinary Medical Association is therefore no longer a continental organization for all the Americas, but it stands for veterinary progress in all the world.

"For the present meeting invitations were extended through the Department of State to the governments of Great Britain, Germany, France, Italy, Denmark, Japan and other foreign countries, in the hope that some would send representatives to this meeting. We have been honored by the Minister of Education of Japan, who has appointed as the representative of his Government Dr. K. Tsuno, professor of Veterinary Science in the Imperial University of Tokio, and I tender to Dr. Tsuno, on behalf of this Association, a warm greeting and our hand of fraternal friendship, and extend him a cordial invitation to the privileges of the floor upon all subjects in which he may feel an interest. This practice is a good one, and should be encouraged, and it would be an act of international courtesy, and one calculated to result in benefit to this country, if our government should delegate a representative to similar veterinary conventions in the Old World.

"Previous to the communication of Prof. Koch to the London Tuberculosis Congress in 1901, in which he maintained the duality of tuberculosis from human and bovine sources, the veterinary profession had pinned its faith and reputation to the doctrine that human beings can and do contract tuberculosis by

eating the meat and drinking the milk of cattle affected with that disease. At their insistence laws had been enacted and regulations enforced looking to the prevention of the consumption of food products from such sources. The commanding position of Prof. Koch as the discoverer of the tubercle bacillus, gave great weight to his conclusions, so that his statements met with world-wide publicity and commanded a respect which would not have been accorded to any other living man. In spite of the blow which was thus dealt to science and to sanitation, the veterinary profession never for a moment admitted the contention of Koch, but went about a search for the exact truth with a will, and every investigator and every commission which has yet made public their conclusions have upheld the theory of the unicity of the tubercle bacilli. Strong and convincing among such investigations was the report detailed by our own Bureau of Animal Industry, conveyed through its Chief, Dr. Salmon, at our fortieth annual meeting. Nearly a year afterwards the Commission appointed by King Edward corroborated these conclusions. The attitude of Prof. Koch has therefore been of real service, particularly to veterinary science, for it so stimulated investigation as to force a solution of the mooted question and incidentally to prove the soundness of the position which this profession has persistently held.

"Veterinary science has lost one of its most distinguished sons, the profession one of its hardest workers and most loyal colleagues, and this Association a valued and beloved honorary member. Prof. Edmond Nocard, of France, died a little over a year ago, and at our Ottawa meeting our sense of deep bereavement was expressed in suitable resolutions, while his likeness, draped in mourning, hung upon our walls. While his great work is sure to preserve his memory and his reputation to posterity, it is proposed to show the appreciation of his colleagues throughout the world by erecting a monument to his memory at his home city in France. The veterinarians of every civilized nation have sent to the committee a contribution; in the United States almost every association which has convened since the project took shape has offered its mite, so that the memorial will constitute a great popular testimonial to his worth and work. We, as the representative veterinary body of the Western World should feel it a pleasant privilege to forward a generous contribution to the fund.

"The subject of a Mutual Benefit Association has for some time been agitated by a number of our members. It was com-

mended by my two immediate predecessors in their annual messages, and our worthy fellow-member, Dr. Dougherty, presented a draft of a proposed constitution and by-laws at our last meeting, which proved a source of considerable discussion. Such organizations flourish in foreign countries, and in the medical profession of this country. It would seem rather hazardous to assume that it would not be successful with us. It is to be hoped that the committee appointed to report upon its feasibility will render a full and comprehensive exposition of the subject at this meeting.

"While the entertainment provided by local veterinarians at meetings for the past seven or eight years reflect their goodness of heart and their appreciation of the honor they feel in the selection of their cities for the holding of our conventions, and, while the Association feels, I am sure, deeply grateful for their consideration and courtesy, I am convinced that elaborate social entertainment is mistaken kindness to us as an association. There is no sort of question but that the custom inaugurated a few years ago of combining social pleasure with the more serious matters of the programme, has been of great benefit to our membership as individuals and as an association. It is very certain that every busy practitioner owes it to his health and his happiness, as well as to his family, to indulge in an occasional vacation from the wearing exactions of routine practice. To have those whom he loves share the pleasures of his holiday can but add greatly to his own enjoyment. So that to have members accompanied by their wives or others of their households is much to be encouraged. Pleasant diversions for them in the Convention city, while husbands and fathers are engaged in the deliberations of the meeting, are also necessary to complete their enjoyment, and it is reasonable and right. But this should not go to the extent of constituting a burden upon the local members. I am convinced that invitations from certain localities are withheld because of the great financial responsibility which is carried with it. Those with experience know that the burden always falls upon a few, and if the same lavish expenditure in entertainment is maintained, it will be but a short time before the Executive Committee will find themselves without a bidder for our annual convention. I can say to you that hosts are growing fewer each year, while we should be sought from all quarters. If a city, centrally located, of easy access to the greatest veterinary population, were annually selected, and the local veterinarians would secure a hall with excellent acoustic

facilities, and merely chaperon the association in the matter of hotels, clinic accommodations, etc., I am sure as great advantages scientifically could be secured, and at the same time the local veterinarians would not be overtaxed, and their guests would not be embarrassed by such a debt of gratitude.

"This is certainly not the least important matter that will engage our attention at this meeting.

"I shall not consume more of the time of this convention by imposing upon it my own impressions of the subjects which appear to call for its consideration at this time, as there is an immense amount of business to be disposed of within the next few days. I will merely express the hope that the routine business of the Association will be disposed of with as much celerity as is consistent with thoroughness, so that all the time possible may be devoted to the scientific section of the programme."

THE ATTENDANCE.

By motion the roll-call was dispensed with, and the members and visitors were notified to register their names and addresses upon cards kept in a booth at the entrance. From these cards the following are shown to have been present during the meeting:

Members.—F. Abele, Quincy, Mass.; F. R. Ahlers, Lamotte, Ia.; F. E. Anderson, Findlay, O.; J. S. Anderson, Seward, Neb.; J. G. Annand, Minneapolis, Minn.; A. H. Baker, Chicago, Ill.; L. R. Baker, St. Joseph, Mo.; J. A. Barnett, Edwardsville, Ill.; F. H. Barr, Pana, Ill.; S. H. Bauman, Birmingham, Ia.; W. L. Beebe, St. Anthony Park, Minn.; E. C. Beckett, Boston, Mass.; Roscoe R. Bell, Brooklyn, N. Y.; G. H. Berns, Brooklyn, N. Y.; A. Bostrom, Minden, Neb.; E. Brainerd, Memphis, Mo.; S. Brenton, Detroit, Mich.; J. J. Brougham, St. Louis, Mo.; F. F. Brown, Kansas City, Mo.; L. D. Brown, Hamilton, Mo.; D. C. Burnett, St. Louis, Mo.; Tate Butler, Raleigh, N. C.; M. V. Byers, Osceola, Neb.; S. H. Caldwell, Chicago, Ill.; C. A. Cary, Auburn, Ala.; W. S. Cass, Lincoln, Neb.; K. G. Cherrington, E. St. Louis, Ill.; J. B. Clancy, National Stock Yards, Ill.; Chas. E. Cotton, Minneapolis, Minn.; T. Bent Cotton, Mt. Vernon, O.; C. W. Crowley, St. Louis, Mo.; W. H. Dalrymple, Baton Rouge, La.; Andrew Darling, St. Louis, Mo.; D. A. Davison, Princeton, Ind.; L. E. Day, Chicago, Ill.; W. E. Day, So. St. Joseph, Mo.; Wm. Dougherty, Baltimore, Md.; G. W. Dunphy, Quincy, Mich.; F. T. Eisenman, Louisville, Ky.; Chas. Ellis, St. Louis, Mo.; J. E. Ellis,

Summer Hill, Ill. ; A. A. Etienne, St. Hyacinthe, Quebec ; J. W. Fink, Washington, D. C. ; Paul Fischer, Columbus, O. ; S. H. Gilliland, Phila., Pa ; C. G. Glendinning, Clinton, Ill. ; Geo. H. Glover, Ft. Collins, Col. ; Wesley M. Thomas, National Stock Yards, Ill. ; J. H. Gould, 11th Cavalry, Fort Riley, Kan. ; R. Graham, E. St. Louis, Ill. ; J. O. Greeson, Kokomo, Ind. ; J. W. Griffith, Cedar Rapids, Ia. ; O. A. Hanson, Chicago, Ill. ; W. F. Heyde, St. Louis, Mo. ; C. H. Higgins, Ottawa, Can. ; J. G. Hill, Jacksonville, Fla. ; C. J. Hinkley, Odebolt, Ia. ; W. C. Holden, Delphos, O. ; F. W. Hopkins, Cairo, Ill. ; W. Horace Hoskins, Phila., Pa. ; D. Arthur Hughes, E. St. Louis, Ill. ; F. A. Illstrup, Willmar, Minn. ; M. Jacob, Ames, Ia. ; J. W. Jameson, Paris, Ky. ; C. G. Jennings, Morris, Minn. ; H. Jensen, Weeping Water, Neb. ; G. A. Johnson, Sioux City, Iowa ; Geo. B. Jones, Sidell, Ill. ; R. A. Kammerer, St. Louis, Mo. ; B. F. Kaupp, Kansas City, Mo. ; Wm. Henry Kelly, Albany, N. Y. ; A. T. Kinsley, Kansas City, Mo. ; D. W. Kirby, St. Paul, Minn. ; J. W. Klotz, Noblesville, Ind. ; G. A. Knapp, Millbrook, N. Y. ; W. A. Knight, Houston, Tex. ; M. E. Knowles, Helena, Mont. ; C. G. Lamb, Denver, Colo. ; M. B. Lamb, Columbus, O. ; James Law, Ithaca, N. Y. ; G. Ed. Leech, Winona, Minn. ; W. W. Lichty, Woodstock, Ill. ; C. Loveberry, Portland, Oreg. ; Wm. Herbert Lowe, Paterson, N. J. ; C. C. Lyford, Minneapolis, Minn. ; R. P. Lyman, Hartford, Conn. ; C. M. McFarland, So. St. Joseph, Mo. ; M. H. McKillip, Chicago, Ill. ; M. McNally, St. Louis, Mo. ; F. H. Mackie, Baltimore, Md. ; James Mahon, St. Louis, Mo. ; C. J. Marshall, Phila., Pa. ; N. S. Mayo, Manhattan, Kan. ; W. H. Meadors, National Stock Yards, Ill. ; L. A. Merilat, Chicago, Ill. ; J. C. Meyer, Cincinnati, O. ; Chester Miller, St. Louis, Mo. ; D. H. Miller, Harlan, Ia. ; J. R. Mitchell, Evansville, Ind. ; V. A. Moore, Ithaca, N. Y. ; J. T. Nattress, Delavan, Ill. ; G. E. Nesom, Clemson College, S. C. ; J. V. Newton, Toledo, O. ; G. B. Nicholas, Kansas City, Mo. ; J. D. Nighbert, Pittsfield, Ill. ; O. G. Noack, Reading, Pa. ; J. C. Norton, Phoenix, Arizona ; H. F. Palmer, Detroit ; A. T. Peters, Lincoln, Neb. ; J. M. Phillips, St. Louis, Mo. ; R. A. Phillips, Plaquemine, La. ; D. A. Piatt, Lexington, Ky. ; C. H. Playdon, Reading, Mass. ; Alex. Plummer, 4th Cav., Ft. Riley, Kan. ; E. C. Porter, New Castle, Pa. ; J. W. Poole, Cedar Rapids, Iowa ; T. B. Pote, St. Louis, Mo. ; H. A. Presler, Fairbury, Ill. ; E. M. Ranck, Natchez, Miss. ; John J. Repp, Phila., Pa. ; M. H. Reynolds, St. Anthony Park, Minn. ; J. F. Roub, Monroe, Wis. ; C. J. Rhodes, Beloit, Wis. ; W. H. Richards, Emporia, Kan. ; A. G.

G. Richardson, Knoxville, Tenn.; G. H. Roberts, Indianapolis; Ind.; James L. Robertson, New York City, N. Y.; James Robertson, Chicago, Ill.; T. E. Robinson, Westerly, R. I.; J. G. Rutherford, Ottawa; D. E. Sawyer, Jackson, Mo.; V. Schaefer, Tekamah, Neb.; E. P. Schaffter, Cleveland, O.; J. W. Scheibler, Memphis, Tenn.; Chas. Schmitt, Dodgeville, Wis.; J. R. Shaw, Honolulu, T. H.; E. H. Shepard, Cleveland, O.; C. R. Simpson, Somerville, Mass.; H. C. Simpson, Denison, Iowa; Thos. E. Smith, Jersey City, N. J.; J. D. Sprague, David City, Neb.; U. S. Springer, Grand Rapids, Mich.; H. E. States, Detroit, Mich.; H. F. Steele, 8th Cav., Ft. Sill, Okla.; R. A. Stephens, National Stock Yards, Ill.; S. Stewart, Kansas City, Mo.; N. I. Stringer, Watseka, Ill.; W. A. Stuhr, Ames, Iowa; Frederick Taylor, Sewickley, Pa.; Thos. Thacker, Renfrew, Ont.; R. Thomas, E. St. Louis, Ill.; W. A. Thomas, Lincoln, Neb.; Arthur Trickett, Kansas City, Mo.; K. Tsuno, Tokio, Japan; James Vincent, Shenandoah, Ia.; Geo. Waddle, Kalamazoo, Mich.; G. M. Walrod, Storm Lake, Ia.; A. R. Ward, Berkeley, Calif.; S. H. Ward, St. Paul, Minn.; Robert Weir, Rutland, Vt.; G. F. Wescott, Portland, Me.; G. R. White, Nashville, Tenn.; T. E. White, Sedalia, Mo.; S. S. Whitbeck, Decorah, Ia.; O. G. Whitestone, Huntington, Ind.; N. P. Whitmore, Gardner, Ill.; E. V. Wilcox, Washington, D. C.; W. L. Williams, Ithaca, N. Y.; J. F. Winchester, Lawrence, Mass.; L. E. Willyoung, Ft. Sam Houston, Tex.; Chas. Winslow, Rockland, Mass.; A. L. Wood, Hampton, Ia.; B. T. Woodward, Oxford, Pa.; A. M. Wray, Richmond, Ill.; G. R. Young, Omaha, Neb.—(175.)

Visiting Veterinarians.—H. A. Arpke, Sheboygan, Wis.; B. F. Barber, Fonda, Ia.; Geo. Bedinger, St. Louis, Mo.; C. F. Behrens, O'Fallon, Ill.; H. Bradley, Winsor, Mo.; E. H. Calander, Zanesville, O.; J. W. Chenowith, Albany, Mo.; J. W. Choate, Columbus, O.; W. E. Clemons, Granville, O.; J. H. Cock, St. Louis, Mo.; F. H. Davis, Chicago, Ill.; W. A. Dougherty, Bucyrus, O.; P. A. Dillahun, Springfield, O.; H. F. Eckert, Markesa, Wis.; C. S. Evans, So. Omaha, Neb.; R. G. Flowers, Ft. Worth, Tex.; G. G. Grundy, St. Louis, Mo.; H. J. Hagerty, Dubuque, Ia.; H. B. Hallenberger, Palmyra, Mo.; H. M. Hart, Columbus, O.; E. M. Hendy, Jefferson City, Mo.; N. W. Hillock, Columbus, O.; J. B. Hollenbeck, Indianapolis, Ind.; H. B. Hood, E. St. Louis, Ill.; L. D. Horner, Woodstown, N. J.; W. J. Hossley, Vicksburg, Miss.; J. J. Hougendobler, St. Louis, Mo.; T. E. Jones, Newark, O.; R. L.

Kelly, National Stock Yards, Ill. ; C. A. Krause, Salisbury, Mo. ; L. D. Le Gear, Austin, Tex. ; F. Lett, Seymour, Ind. ; R. C. Lew, Mascoutah, Ill. ; W. K. Lewis, St. Louis, Mo. ; J. H. Lowe, E. St. Louis, Ill. ; D. F. Luckey, Columbia, Mo. ; J. A. Madden, Ithaca, N. Y. ; W. J. Martin, Kankakee, Ill. ; W. E. Martin, Perry, Mo. ; T. J. Menestrina, E. St. Louis, Ill. ; C. D. Meredith, Vinita, I. T. ; L. B. Michael, Moberly, Mo. ; E. K. Paine, Santa Clara, Cuba ; S. V. Ramsay, Terre Haute, Ind. ; J. B. Reidy, E. St. Louis, Ill. ; J. J. Richardson, Marcus, Ia. ; A. Robertson, Mt. Carmel, Ill. ; W. Runge, Newark, N. J. ; J. R. Sanders, Corydon, Ia. ; A. J. Savage, Colorado Springs, Colo. ; J. G. Schreck, Troy, Ill. ; W. F. Scott, Oak Park, Ill. ; H. J. Sebaugh, Farmington, Ill. ; S. L. Shaw, E. St. Louis, Ill. ; D. C. Smith, Frankford, Indiana ; Stanley Smith, Columbia, Mo. ; G. W. Stanbridge, Winchendon, Mass. ; W. S. Stinson, Walhalla, N. Dak. ; W. W. Talbot, Oskaloosa, Ia. ; R. H. Thomas, National Stock Yards, Ill. ; R. M. Thompson, Darlington, Wis. ; H. J. Timmermann, St. Louis, Mo. ; A. Travis, Litchfield, Ill. ; C. O. Van Winkle, Hillsboro Ia. ; J. W. Watson, St. Louis, Mo. ; W. E. White, Pittsburg, Pa. ; M. C. Wiley, St. Louis, Mo. ; W. J. Williams, Franklin, Ind. ; J. H. Youngs, Belmont, N. Y.—(68)

Ladies and Children.—Mesdames F. E. Anderson, Findlay, O. ; A. H. Baker, Chicago, Ill. ; S. Brenton, Detroit, Mich. ; H. B. Brooks, Philadelphia, Pa. ; C. E. Cotton, Minneapolis, Minn. ; A. Darling, St. Louis, Mo. ; D. A. Davison, Princeton, Ind. ; Chas. Ellis, St. Louis, Mo. ; J. E. Ellis, Summer Hill, Ill. ; Paul Fischer, Columbus, O. ; G. G. Grundy, St. Louis, Mo. ; C. J. Hinkley, Odebolt, Ia. ; W. C. Holden, Delphos, O. ; W. Horace Hoskins, Philadelphia, Pa. ; H. Jensen, Weeping Water, Neb. ; J. W. Jameson, Paris, Ky. ; G. A. Jarman, Chestertown, Md. ; G. A. Johnson, Sioux City, Ia. ; W. H. Kelly, Albany ; Lizzie Keyes, Summer Hill, Ill. ; G. A. Knapp, Millbrook, N. Y. ; W. A. Knight, Houston, Tex. ; M. E. Knowles, Helena ; G. Ed. Leech, Winona, Minn. ; C. C. Lyford, Minneapolis, Minn. ; F. H. Mackie, Baltimore, Md. ; J. Mahon, St. Louis, Mo. ; C. J. Marshall, Philadelphia, Pa. ; T. J. Menestrina, E. St. Louis, Ill. ; J. V. Newton, Toledo, O. ; D. A. Piatt, Lexington, Ky. ; C. H. Playdon, Reading, Mass. ; E. C. Porter, New Castle, Pa. ; M. P. Rahilly, Fargo, N. Dak. ; E. M. Ranck, Natchez, Miss. ; Louis Rittger, St. Louis, Mo. ; V. Schaefer, Tekamah, Neb. ; J. W. Scheibler, Memphis, Tenn. ; J. R. Shaw, Honolulu, T. H. ; C. R. Simpson, Somerville,

Mass.; H. E. States, Detroit, Mich.; S. Stewart, Kansas City, Mo.; G. F. Wescott, Portland, Me.; G. R. White, Nashville, Tenn.; B. T. Woodward, Oxford, Pa.; Misses F. C. Baker, Chicago, Ill.; R. L. Brenton, Detroit, Mich.; Nellie Carroll, St. Paul, Minn.; Mary L. Crowley, St. Louis, Mo.; Emily Crowley, St. Louis, Mo.; Margaret Flint, Reading, Mass.; Nellie Adele Fuller, Chicago, Ill.; Ray Harris, St. Louis, Mo.; Rutha Shackford, Reading, Mass.; Elizabeth White, Nashville, Tenn.; Missie White, Nashville, Tenn.; May Williams, New York; Master Cheston M. Hoskins, Philadelphia, Pa.—(58).

Other Visitors.—C. B. Banks, Memphis; J. C. Booker, Alton, Ill.; H. P. Brooks, Philadelphia, Pa.; C. P. Field, St. Louis, Mo.; H. J. Keveny, New York; B. F. Kimball, Pana, Ill.; L. M. Klutz, Clinton, Mo.; L. H. Laidley, M. D., Medical Director, Louisiana Purchase Exposition, St. Louis; F. P. McNally, St. Louis, Mo.; C. C. Mills, Decatur, Ill.; Wm. R. Ray, M. D., St. Louis, Mo.; E. Richardson, Marcus, Ia.; C. W. Springer, Connellsville, Pa.; E. S. Stevens, Mt. Morris, Ill.; R. S. Taylor, St. Paul, Minn.; Hon. Henry H. Wernse, President Merchant's Exchange, St. Louis, Mo.—(16).

The reading of the minutes of the last annual meeting was dispensed with, and the printed proceedings were adopted in lieu thereof.

NEW MEMBERS ELECTED.

During the various sittings of the Executive Committee the following applications for membership were favorably recommended to the Association, and they were duly elected:

Active Members.—F. R. Ahlers, Lamotte, Ia.; L. R. Baker, S. St. Joseph, Mo.; J. A. Barnett, Edwardsville, Ill.; F. H. Barr, Pana, Ill.; S. H. Bauman, Birmingham, Ia.; W. L. Beebe, St. Anthony Park, Minn.; A. F. Bollinger, Brooklyn, N. Y.; J. J. Brougham, St. Louis, Mo.; L. D. Brown, Hamilton, Mo.; G. W. Browning, San Antonio, Tex.; A. H. Burling, Philadelphia, Pa.; Pedro L. del Caril, Buenos Ayres, Argentine Republic; B. E. Chaney, Monroe, La.; K. G. Cherrington, E. St. Louis, Ill.; W. H. Cole, Broken Bow, Neb.; W. B. Craig, Indianapolis, Ind.; F. W. Culver, Longmont, Colo.; L. Enos Day, Chicago, Ill.; W. E. Day, S. St. Joseph, Mo.; E. C. Dingley, Villa Nova, Pa.; J. E. Ellis, Summer Hill, Ill.; C. S. Evans, Bethany, Neb.; Adam Fisher, Charlotte, N. C.; C. G. Glendinning, Clinton, Ill.; W. M. Goff, E. St. Louis, Ill.; Ralph Graham, National Stock Yards, Ill.; Marvin Gregory, E. St. Louis, Ill.; Seymour Hadwen, Nelson, B. C.; H. B. Hamilton, New Bedford, Mass.;

Ingild Hansen, San Antonio, Tex. ; O. A. Hansen, Chicago, Ill. ; C. M. Haring, Berkeley, Calif. ; Alex. Harthill, Jr., Louisville, Ky. ; Jacob Helmer, Scranton, Pa. ; D. Arthur Hughes, E. St. Louis, Ill. ; C. G. Jennings, Morris, Minn. ; Geo. B. Jones, Sidell, Ill. ; E. L. Kalb, Rochester, Minn. ; R. V. Kammerer, St. Louis, Mo. ; A. T. Kinsley, Kansas City, Mo. ; B. W. Kirby, St. Paul, Minn. ; J. W. Klotz, Noblesville, Ind. ; Chas. G. Lamb, Denver, Col. ; M. F. Leffingwell, Austin, Minn. ; Wm. J. Lentz, Hatboro, Pa. ; W. W. Lichty, Woodstock, Ill. ; C. C. Lipp, St. Anthony Park, Minn. ; Wm. M. McKellar, Fort Worth, Tex. ; Michael McNalley, St. Louis, Mo. ; James Mahon, St. Louis, Mo. ; W. H. Meadors, E. St. Louis, Ill. ; W. E. Martin, Winnipeg, Man. ; H. J. Milks, Candor, N. Y. ; D. H. Miller, Harlan, Ia. ; T. E. Munce, Washington, Pa. ; J. T. Nattress, Delavan, Ill. ; G. B. Nicholas, Kansas City, Mo. ; S. M. Nissley, Middletown, Pa. ; A. B. Niven, S. Paul, Minn. ; Henry Nunn, McMinnville, Oreg. ; J. O'Connor, Hunter, N. D. ; Edgar Odell, New York ; Arthur Paul, National Stock Yards, Ill. ; F. M. Perry, Fort Fairfield, Me. ; R. A. Phillips, Plaquemine, La. ; J. W. Poole, Cedar Rapids, Ia. ; Richard H. Power, Artillery Corps, Fort Riley, Kans. ; J. O. F. Price, E. St. Louis, Ill. ; G. A. Roberts, Raleigh, N. C. ; G. H. Roberts, Indianapolis, Ind. ; J. E. Robertson, Monona, Ia. ; J. W. Robinson, Coal Harbor, N. D. ; M. Rosenberger, Pullman, Wash. ; J. F. Roub, Monroe, Wis. ; Jos. R. Shaw, Honolulu, T. H. ; A. S. Shealy, Clemson College, S. C. ; D. G. Shumway, S. St. Paul, Minn. ; H. E. States, Detroit, Mich. ; J. A. Stevenson, Carman, Man. ; W. A. Stuhr, Ames, Ia. ; Frederick Taylor, Sewickley, Pa. ; R. Thomas, E. St. Louis, Ill. ; James Vincent, Shenandoah, Ia. ; Robert Weir, Rutland, Vt. ; G. F. Wescott, Portland, Me. ; M. S. Whitcomb, St. Paul, Minn. ; Mark White, Jr., Denver Col. ; M. M. White, Shreveport, La. ; O. G. White-stine, Huntington, Ind. ; John J. D. Whyte, Sherbrooke, Que. ; L. E. Willyoung, Artillery Corps, Fort Sam Houston, Tex. ; W. D. Wright, N. Fort Worth, Tex.—(92.)

Reinstated to Active Membership.—Andrew Darling, St. Louis, Mo. ; F. T. Eisenman, Louisville, Ky. ; J. Wm. Fink, Washington, D. C. ; J. M. Phillips, St. Louis, Mo.—(4.)

Elected to Honorary Membership.—E. V. Wilcox, A. M., Ph. D., Washington ; K. Tsuno, Professor of Veterinary Sanitary Science and Police, Imperial University, Tokio, Japan.—(2.)

REPORTS OF REGULAR AND SPECIAL COMMITTEES.

The various regular and special committees either presented

their reports the first day or deferred them until later in the meeting when not in readiness for presentation.

Mutual Aid Association.

Chairman Dougherty, of the committee to investigate the practicability of establishing a Mutual Aid Association, presented the written replies of the various members of his committee, which were unanimously adverse to the proposition, and the committee was discharged with thanks.

Pharmacopœia.

Chairman Ranck, of the Committee on Pharmacopœia, presented a verbal report to the effect that after vainly endeavoring for some years to discover if it were possible or practical to undertake such an enormous task, he found that to produce a work in a manner worthy of the Association would involve too much time, labor and expense, and he thought the project should be abandoned. This view was also voiced by Drs. Merillat and Bell (other members of the committee); and at their united request the committee was discharged.

Diseases.

The Committee on Diseases presented a splendid report. Heretofore this committee has either failed to report or has accompanied it by an apology, explaining that the subject was too large to be handled. A few years ago it was instructed by the Association to treat of a few particular diseases each year. Dr. Charles H. Higgins, of Ottawa, Can., was made chairman last year, and a strong committee was named to support him, the appointees being strong members of the profession in varied sections of the country. They were Drs. A. S. Wheeler, of North Carolina; C. A. Cary, of Alabama; V. A. Moore, of New York; N. S. Mayo, of Kansas, and A. R. Ward, of California. Each of these members brought or forwarded a scientific paper on a well-investigated topic. Dr. Higgins treated of "Actinobacillosis," in which he had made extensive bacteriological investigation. The paper was discussed by Drs. Mayo, Ward, Rutherford and Wilcox, which brought forth many points through the counter-discussion with Dr. Higgins.

"Nymphomania in Cows Due to Ovarian Cysts," by Dr. A. S. Wheeler, proved to be provocative of much discussion, principally as to the method of rupturing the cysts, in which Drs. Williams, Mayo and Lyman took part.

Dr. V. A. Moore chose "Infectious Abortion in Cattle" as his section of the committee's work, and it was in the nature of a statement of his researches to find the germ which produces it. Dr. J. G. Rutherford was the principal contributor to the debate.

Dr. N. S. Mayo gave his experience with "Scabies in Cattle," reserving the reading of his report, however, until a paper upon the same subject by Dr. Glover, of Colorado, was offered, when they were discussed at the same time.

Dr. Archibald R. Ward contributed as his part of the report a résumé of the diseases of fowl, as he has investigated them on the Pacific Coast. His experience has been chiefly with roup (a form of fowl diphtheria) and tuberculosis. He gave some wonderful statistics of the extent of chicken raising around San Francisco. In Saloma County alone he estimated the output of the hens at 30,000,000 dozen eggs annually, which, if placed end to end would reach 1400 miles. He had tested tuberculosis in fowl with tuberculin, but had met with but slight results. This subject was discussed by Drs. Trickett, White and Kaupp.

Excellence and Soundness.

The Committee on Standard of Excellence and Soundness reported both through Chairman George H. Berns, of New York, and Dr. M. H. Reynolds, of Minnesota. After giving careful consideration to the question of soundness for a year, Dr. Berns was of opinion that no satisfactory rules could be laid down for the guidance of veterinarians upon this subject, and asked that his committee be discharged, thereby meeting the fate of all similar committees and individuals who have attempted this knotty problem. Where lesions and conformations have their significance based upon conditions found in each individual case, how can it be possible to lay down hard and fast rules for subjects where the conditions are not known? It is fortunate for veterinary science that decisions can only be arrived at by the veterinarian in the presence of the particular subject, else it would be possible to dispense with their services in the examination of horses for soundness, simply using a "guide book" for topographical imperfections. However, a discussion of the subject is always fascinating and instructive, and its incorporation in the programmes of association meetings is beneficial and certain to provoke plenty of debate. Dr. Reynolds dealt with the question of "excellence," and contributed a paper more up-

on the conformation and external form of the horse. We have little doubt but that this committee will eventually be succeeded by one upon Animal Husbandry, and in the hands of men who give the subject careful thought and investigation will prove a valuable one for the members.

Intelligence and Education.

Chairman E. B. Ackerman, of New York, forwarded the report of this committee, and it was read by Dr. Ranck, the discussion upon it being deferred until after the reading of Dr. Liautard's paper upon "Needed Reforms in Veterinary Education in America." His report dealt entirely with the colleges of the country, and further reference to this report will be given in the summary of the proceedings of the St. Louis meeting.

REPORTS OF STATE SECRETARIES.

Never before have the reports of the Resident Secretaries been so numerous nor so interesting, more than half of them responding either in person or by mailed report. There are 49 of such Secretaries, seventeen of whom read or gave verbal reports, while nine sent their reports to the Secretary. The former were as follows: Arizona and New Mexico, J. C. Norton; California, A. R. Ward; Colorado and Utah, Geo. H. Glover; Florida, J. G. Hill; Indiana, J. O. Greeson; Kansas, N. S. Mayo; Kentucky, D. A. Piatt; Michigan, G. W. Dunphy; Minnesota, J. G. Annand; Mississippi, E. M. Ranck; Missouri, Chester Miller; Montana, M. E. Knowles; Nebraska, G. R. Young; New York, Wm. Henry Kelly; Pennsylvania, C. J. Marshall; Quebec, A. A. Etienne; Tennessee, G. R. White. The latter were as follows: Arkansas, R. R. Dinwiddie; British Columbia, Johnson Gibbons; Illinois, E. L. Quitman; Maine, A. Joly; Nevada and Idaho, J. O. Jacobs; Nova Scotia, Wm. Jakeman; Texas, H. D. Paxson; Virginia, John Spencer; Wisconsin, Charles Schmitt.

ELECTION OF OFFICERS.

The election of officers for the ensuing year occurred in the afternoon of the first day. Dr. Wm. Herbert Lowe, of New Jersey, placed the name of Dr. M. E. Knowles, of Montana, before the convention, and it was seconded in most eulogistic speeches by Drs. Rutherford, Winchester, Lyford and Mayo, and so irresistible was the tide toward the gallant son of Montana that no other gentlemen were proposed, though it was generally understood that two or three expected to enter the race.

To obtain five Vice-Presidents the following gentlemen were placed in nomination : Drs. J. G. Rutherford, of Canada ; George R. Young, of Nebraska ; George H. Berns, of New York ; C. C. Lyford, of Minnesota ; George W. Dunphy, of Michigan ; George C. Glover, of Colorado ; E. M. Ranck, of Mississippi ; and R. P. Lyman, of Connecticut. The five receiving the largest number of votes were Drs. Rutherford, Ranck, Young, Dunphy, and Lyman, ranking in the order given. For Secretary, there was no opposition to the former incumbent, Dr. Repp, and by motion the President cast the vote of the Association for his election. Dr. Lowe was reelected without opposition. The officers for 1904-05 are therefore as follows :

President—M. E. Knowles, of Montana.

Vice-Presidents—J. G. Rutherford, of Canada.

—E. M. Ranck, of Mississippi.

—G. R. Young, of Nebraska.

—G. W. Dunphy, of Michigan.

—R. P. Lyman, of Connecticut.

Secretary—John J. Repp, of Pennsylvania.

Treasurer—Wm. Herbert Lowe, of New Jersey.

PAPERS AND DISCUSSIONS.

The first paper under this heading presented was that entitled "When to Operate," by Dr. L. A. Merillat, of Illinois, and it was a splendid exposition of the subject. Of course such a document cannot be summarized by a reviewer, as the immensity of the subject made it only possible for the essayist to treat it in that manner, but his conclusions were most positive and clear cut. The paper is printed in full elsewhere in this number of the REVIEW. It provoked a general discussion, principally upon the subject of choke in the soliped, the essayist having made the assertion that, as a rule, the soliped was never the object of choking save upon masticated food, solid objects being confined to ruminating animals. Those taking part in the debate were Drs. Beckett, Williams, Young, Baker, Shepard, Law, Robertson and Griffiths.

"Creeps, an Osteomalachial Disease of Cattle," by Dr. Joseph W. Parker, of Texas, was read by former President Stewart, and discussed by Drs. Williams, Higgins and Law.

"The Cattle Mange Problem in the West" was presented by Dr. George H. Glover, of Colorado, and it was followed by that section of the report of the Committee on Diseases treating on the same subject, by Dr. N. S. Mayo, of Kansas, who differed

considerably from the conclusions of Dr. Glover in regard to what constitutes a cure. He maintained that the subsidence of the symptoms of "itch" and the return of the denuded hair was no guarantee that the parasite was extinct; that it was very likely to begin its irritant operations again under proper environment (stabulation); that liberal feeding and the return of flesh was also not an assurance that the animal was no longer a host of the parasite. Most of the speakers who followed (Drs. Dunphy, Rutherford, Knowles, Norton, and Peters) confirmed Dr. Mayo's position, and contributed many other valuable points to the general discussion of mange.

"Needed Reforms in Veterinary Education in the United States" was from the pen of Dr. A. Liautard, of Paris, France, who has been intimately associated with education in this country since its birth, and has been regarded for many years as its founder and most enthusiastic champion. Although he has resided abroad since his retirement from active practice there is probably no man who keeps more thoroughly posted upon the conditions that exist here among the schools, his pen being in active operation at all times and nothing escapes his eye in the literature upon the subject. He reviewed the announcements of the various colleges and pointed out the weak parts contained in them, showing their wide divergence in entrance requirements, in the subjects taught and in the length of the courses. He advocated the rehabilitation of the Association of Faculties, in conjunction with the A. V. M. A., and their coöperation toward harmonizing and elevating the quality of the education imparted to students. He strongly urged a more stringent entrance examination, and thought there should be a uniform degree granted by the various colleges. The President, in his address, had spoken much in the same strain, and made some specific suggestions as to the accomplishment of the reforms urged; this document was referred to the Executive Committee to consider the suggestions contained in it, but that body was so overworked that it could not find time to take it up, deferring its consideration until the next annual meeting.

Prof. James Law was assigned by the programme to open the discussion upon Dr. Liautard's paper, and did so in a lengthy paper, dealing particularly with the high standard of the colleges of New York State, the high entrance requirements exacted by the State Board of Regents, and saying that it is impossible to unify the standard in all the States unless it be by their coming up to the New York standard. Other speakers followed

at length, taking a view different from that of Prof. Law, all admitting that they would not have the Empire State recede from its high position, but much could be done to make more uniform the other colleges of the country, and gradually lift them until such time as they may be brought up to the New York standard. Dr. S. Stewart, of Kansas City, dwelt at length upon this aspect of the subject, while Dr. James Robertson, of Chicago, made a plea for what he termed "the poor young man". He failed to make a distinction between poverty of purse and that of the mind, and seemed to think that being born on a farm was a greater qualification than a university education. Several speakers deplored his sentiment, and showed that the majority of the most brilliant scientific men had struggled with poverty, and had secured a classical education as well.

The subject was placed before the Association squarely in all its phases—first, by the President, then by the Committee on Intelligence and Education, then by Profs. Liautard and Law, and finally by the discussionists. The only action taken was the adoption of a resolution directing the President to appoint additional members of the Committee on Intelligence and Education to keep an espionage upon the colleges to ascertain how nearly they fulfil the statements made in their annual announcements.

"The Possible Eradication of Glanders by the Use of Mallein," by Dr. F. F. Brown, of Kansas City, proved a popular theme for discussion, those taking part in it being Drs. Winchester, Moore, Thomas, Rutherford, Abele, Law, and Young. Winchester asked for a definition of what was considered symptoms, and when should a horse be considered as exhibiting external manifestations of the disease. Rutherford detailed at length the system in vogue in Canada in dealing with the disease, and he showed plainly that he esteemed the serum less valuable as a curative agent than he did when discussing the same subject at Ottawa last year. He rather thought that a subject reacting should be destroyed, or at least should be placed under a very strict quarantine.

The guest of the Association, Dr. K. Tsuno, professor of veterinary sanitary science and police at the Imperial University of Tokio, Japan, not only attended every session of the convention as an attentive listener, but contributed a paper of much merit on "The Contagious Diseases of Animals in Japan," enumerating those most prevalent and detailing the manner of dealing with them.

It was greatly regretted that Dr. Leonard Pearson, of Pennsylvania, had not returned from Europe, for he was down for a paper upon the "Immunization of Cattle against Tuberculosis," but he sent his assistant, Dr. Gilliland, who read a statement of the progress of the important experiments now being conducted by them along this line, in which he declared that everything pointed to practical results of great moment to the profession. He announced that a full report would soon be promulgated by them detailing the progress thus far made. While this was received with satisfaction, the absence of the gifted State Veterinarian of Pennsylvania withheld from the Association much that he would have contributed to the subject.

Wednesday evening the hall was filled to its capacity to hear the papers requiring lantern slide views to illustrate them. These were "The Treatment of Roup in Fowls," by Dr. A. R. Ward, of California, and "The Clinical Examination of the Blood of Horses and Its Value to the Veterinarian," by Dr. V. A. Moore, of New York. They were well received, and in the case of the latter the speaker alluded to the great importance of blood examination in the diagnosis of disease. He said that during the coming year the subject would be pursued with a view of developing it to a point where any departure from the normal standard (shown in the present paper) would mean a definite thing.

"Veterinary Medicine and Surgery in the Philippines," by Dr. Charles H. Jewell, of Manila, P. I., was read by Dr. N. S. Mayo, and discussed by Drs. John H. Gould, Mayo, and Alex. Plummer, of the U. S. Army. Following this paper another one upon "Conditions of Practice Met With in the Philippines" was presented by Dr. Gould, of Fort Des Moines, Iowa, who has recently returned from the Far East. Dr. Hal C. Simpson, of Iowa, also made some interesting remarks about the conditions existing in that country.

"Quittors and Sidebones and Their Treatment," by Dr. C. C. Lyford, of Minnesota, was illustrated by numerous drawings and photographs illustrative of the subject. He detailed the various methods of operative interference, and also the method of treatment with the object of mummifying the diseased area. Dr. Berns, of New York, gave his experience with the Bahr method of operating, and was very enthusiastic at the results just obtained in a case in his practice operated upon by Dr. W. L. Williams while the latter gentleman was on a visit to Brooklyn. Dr. Merillat contributed considerable to the discussion,

throwing a little cold water upon the operation described by Dr. Berns as not being very practical save in the perfect operating room, but he failed to cool the ardor of the Brooklyn surgeon, who at once announced that he had on hand about fifteen cases of quittor, and he would submit every one of them to the operation described and report his results at the meeting of 1905. Drs. Law and Jensen described methods of treatment by injection, believing that frequently quicker results can be obtained without such radical measures.

"A Simple but Effective Live Stock Sanitary Law," by Dr. A. W. Bitting, Lafayette, Indiana, was read by the Secretary, and Dr. J. I. Gibson forwarded by Dr. Simpson a discussion of the new law, highly commending it, as it gave unusual power and discretion to the State veterinarian. Remarks were also made by Drs. Butler, Law, and Mayo.

Dr. G. E. Nesom, of South Carolina, fulfilled his number on the programme by addressing the meeting on the subject of "Some Observations on the Comparative Virulence of the Pyrosoma Bigeminum," detailing some experiments conducted by him. The subject was discussed by Drs. Law and Norton.

REVISION OF THE BY-LAWS.

The Executive Committee spent many hours in consideration of the report of the Committee on Revision of the Constitution and By-Laws, of which Dr. M. H. Reynolds was Chairman. This committee had taken great pains to produce an instrument which would eliminate some objections in the old document. It was read to the meeting and discussed whenever any objection was found. That section which required an applicant for membership to forward with his application the initiation fee and the first year's dues caused a long discussion, some thinking no dues should be charged for the first year. Put to a vote, the committee was sustained. Another bone for contention was the by-law requiring the President to appoint a nominating committee composed of past presidents. The Association rejected this proposition, and nominations will be made from the floor as in the past. In other respects the new Constitution and By-Laws were adopted.

* * *

NOTES OF A. V. M. A. MEETING.

Never such a meeting.

More *work* was accomplished at the St. Louis meeting than at *any* of its predecessors.

More new members were admitted at St. Louis than at any previous meeting.

More executive business was transacted at St. Louis than at any previous meeting.

A novelty at the clinic was the administration of an aloetic ball to a horse by the wife of one of the members.

Dr. Leech's immaculate white costume was quite the sensation of the banquet.

New Jersey was represented by four of her best men—Lowe, of Paterson ; Smith, of Jersey City ; Runge, of Newark, and Horner, of Woodstown.

High as the mark was placed at Ottawa in the addition of new members, St. Louis eclipsed it—78 at Ottawa, 92 at St. Louis.

The Treasurer's report showed the Association to be more than \$200 richer than at the same time last year, notwithstanding some extraordinary demands upon its funds.

Invitations for the meeting of 1905 were received from Portland, Oregon ; Cincinnati, Ohio ; New Orleans, La. ; Toledo, Ohio ; and Detroit, Mich.

The members and professional visitors were glued to their chairs, taking in every word that fell from the essayists or the discussionists.

In this issue and subsequent ones, the REVIEW hopes to reproduce much that occurred at St. Louis ; but this can never compensate for an absence from this meeting.

Dr. Alexander Plummer was the official representative of the Secretary of War at the meeting. Other army veterinarians present were Drs. John H. Gould, H. F. Steele, and W. L. Willyoung.

Dr. K. Tsuno, representative of the Japanese Government, presented the Association, through the President, with a copy of a statistical work entitled "Japan at the Beginning of the Twentieth Century."

Only one instrument house made a display at St. Louis—Sharp & Smith, of Chicago ; and it did a good business in taking orders. Alex. Eger, the Chicago publisher of veterinary books, was on hand, as usual, and booked orders galore.

The Association contributed one hundred dollars to the Nocard Monument Fund, so that the amount subscribed by the Americans is now of a character somewhat in keeping with other nations.

At St. Louis, there were 175 members in attendance and 68

visiting veterinarians; at Ottawa there were only 103 members and 50 visiting veterinarians. There were two more ladies registered at Ottawa than at St. Louis.

Prof. E. Perroncito, of Turin, Italy, forwarded two pamphlets, written by him, to the Secretary, as a contribution to the programme. They were ordered translated and published in the "Proceedings."

Dr. Edward J. Creeley, Dean of the San Francisco Veterinary College, was an interested attendant at most of the sessions. He has grown very stout since his college days, but is active and unburdened by his avoirdupois.

They were there from almost everywhere: Dr. Shaw from Hawaii; Drs. Ward and Creeley from California; Drs. Rutherford and Thacker from Canada; Drs. Dalrymple and Phillips from Louisiana; Dr. Hill from Florida; Dr. Westcott from Maine; Dr. Norton from Arizona, and so on *ad infinitum*.

The South sent a large delegation—Dalrymple and Phillips from Louisiana; Hill from Florida; Cary from Alabama; Ranck from Mississippi; Nesom from South Carolina; Sheibler and White from Tennessee; Butler from North Carolina; Piatt from Kentucky, and quite a number of others.

The convention was photographed in front of the hall at noon on the second day, the picture containing about 240 individuals, although many had gone to luncheon or to the World's Fair, and of course no ladies were present, since the meeting place was a long distance from the hotel.

President Knowles announced his Executive Committee as follows: Charles E. Cotton, of Minnesota, Chairman; D. E. Salmon, Washington, D. C.; Roscoe R. Bell, New York; W. H. Dalrymple, Louisiana; W. Horace Hoskins, Pennsylvania, and John R. Mitchell, Indiana.

Dr. Richard P. Lyman, of Connecticut, has accepted the chairmanship of the Publication Committee for next year, and we congratulate the Association on its continued good fortune in securing the services of men of high type for this important position.

Dr. D. E. Salmon was greatly missed from the committee rooms and the debates, and we know how grievously he regretted not being able to attend. He was in the West with Secretary Wilson on important business connected with his department.

An Eastern party, consisting of Drs. James L. Robertson, George H. Berns, W. H. Dalrymple, Wm. Herbert Lowe, Thomas

E. Smith and Roscoe R. Bell, went by the Erie and Big Four, arriving in St. Louis six hours late, and on the return trip were eight hours behind the schedule. Moral: In going by rail to St. Louis take some other route.

The representative of the Japanese Government, Dr. K. Tsuno, was not a mere diplomatic functionary; he was in his seat throughout the meeting; nothing escaped him; he contributed to the programme in many ways, and when the meeting was concluded he gave assurance that he greatly appreciated the many courtesies extended him and had profited much by what he had heard and seen.

The badges came in for considerable criticism. They were "immense," their weight being sufficient to drag down the lapel of the coat. Of all such contrivances, that supplied at Ottawa was the neatest and most highly prized of any that we have ever seen. They were all preserved and many are yet being worn by ladies as collar pins and brooches, several being observed doing that service at St. Louis.

What is the matter with the Manhattan end of New York City? A solitary delegate from the largest veterinary population in this country. Dr. James L. Robertson (who rarely misses a meeting of the A. V. M. A.) was the only resident of Manhattan Island who thought it worth his while to attend the greatest meeting of scientific veterinarians ever held in this country.

By resolution of the Association, the Chairman of the Publication Committee will henceforth be exempt from dues, and his actual expenses while attending a meeting will be defrayed by the Association. This tardy recognition of very arduous labors was due to the thoughtfulness of the retiring chairman, Dr. M. H. Reynolds, who, though he received nothing himself for several years of excellent and earnest work, was unwilling that his successor should be without some recompense.

The exhibit of the Bureau of Animal Industry in the Government Building at the World's Fair is very complete and fascinatingly interesting and instructive. Dr. Wm. J. Fink has charge of it, and took delight in showing the visiting veterinarians everything calculated to engage their attention. He has very kindly volunteered to assist Dr. D. Arthur Hughes in preparing his report of the exhibit for the REVIEW, by furnishing him his notes.

Dr. L. A. Merillat, at the conclusion of his paper, "When to Operate," spoke in a disparaging manner of the character of

the clinics held under the auspices of the A. V. M. A., and thought they should be placed in charge of a committee of competent surgeons in the future, or else be abandoned. These clinics, he said, should be conducted under the strictest rules of modern antiseptic surgery, with all necessary appliances, and the whole to be worthy of the representative veterinary organization of America. In this opinion the REVIEW heartily concurs; but it can see no reason why they should be abandoned. As the President has, or is to appoint a Committee on Programme, it is presumed that they will correct the errors complained of.

Dr. Booker, of Alton, Ill., exhibited a spiral steel spring, about eight inches long, an inch and a half in diameter, and weighing about two pounds, which he had removed from the small intestine of a horse. The explanation of its presence given by the surgeon is as follows: The spring had been used on a farming implement, but was too strong. Consequently it was replaced by one more suitable, and the old one was hung against the wall. The horse, reaching up to the ceiling or hay-mow to seize some hay in its mouth, dislodged the spring, which fell into its open pharynx; its weight prevented its being brought back into the mouth by the tongue, and the contractions of the pharyngeal muscles, together with the weight of the foreign body, forced the object into the œsophagus and thence into the stomach, finally passing into the intestinal tract, where it induced fatal colics.

The Committee on Revision of the Constitution and By-Laws made a recommendation which failed to be ratified by the Association, which evidently failed to grasp the spirit which actuated its promoters. The proposition was to have a Nominating Committee appointed to consist of all the past presidents who may be in attendance upon a meeting. This committee was directed to present the names of not less than three candidates for the office of President; ten for the five vice-presidential positions; and two each for Secretary and Treasurer. There was nothing in the by-law to prevent other names from being placed in nomination; it merely insured a contest for the offices, instead of the method of naming one candidate, and closing off nominations before an opportunity was given to everyone to avail themselves of the privilege. But several members thought it would partake of the character of machine politics, restrict their liberty, etc., and so it was voted down.

The banquet at the Monticello was a great success. One hundred and sixty or more sat around the long tables, among whom were a large number of ladies. Dr. Roscoe R. Bell acted as toastmaster, and on either side of him at the head of the table were Dr. Laidley, Medical Director of the World's Fair; Dr. Ray, of the University; Dr. Tsuno, representing the Government of Japan; Dr. Knowles, the President-elect; Dr. Rutherford, Veterinary Director-General of Canada; Secretary Repp; Dr. Winchester, former President of the A. V. M. A.; and Dr. Williams, also a former President. At the conclusion of the repast the toastmaster introduced Dr. Ray, who spoke to the sentiment of "The Two Branches of the Medical Profession;" Dr. Laidley, "The Veterinarian and the World's Fair;" Dr. Higgins, "Our Canadian Brethren;" Dr. Williams, "The Veterinarian as a Teacher;" Dr. Hoskins, "The Veterinarian as a Politician;" Dr. Butler, "The Veterinarian as a Citizen;" Dr. Mayo, "The Ladies;" Dr. Knowles, "The A. V. M. A.;" Dr. Tsuno, "A Message from Japan." During the evening Dr. Annand delighted the audience by some well-rendered songs. The singing of "Auld Lang Syne" by the banquetters brought the enjoyable evening to a close.

MINNESOTA STATE VETERINARY MEDICAL ASSOCIATION.

The seventh semi-annual meeting was called to order at Litchfield, Minn., at 2.30 P. M., July 14, by Dr. L. Hay, President and Chairman. After roll-call the minutes of last meeting were read and accepted as read.

The Treasurer's report was next given, which showed a balance of \$80.71 in the hands of the Treasurer, with no indebtedness. From a financial standpoint our Association was never in such a flourishing condition.

Under the head of new business came the distribution of the directory of licensed veterinary practitioners, which the Association instructed the Secretary to have printed at our January meeting. Dr. Annand thought that a dollar per copy to individuals who are not members of our Association was too high. Dr. Ward made a motion, which was seconded by Dr. B. Lambrechts, that the price of the directories be reduced to twenty-five cents per copy, and that a new directory be printed every two years.

The Secretary was instructed to notify all licensed practi-

tioners in the State that the directory can be obtained at the office of the Secretary for twenty-five cents per copy. It was moved and seconded that a copy of the directory be sent to all the reputable veterinary colleges. Carried.

What will be done with delinquents? was a question asked by the Secretary. After reading the list of members who are in arrears, Dr. Reynolds made a motion, seconded by Dr. Lees, that all members who are in arrears three years at our next meeting be dropped from our membership list, and that the Secretary send two written notices to the delinquents stating the action the Association had taken with delinquent members before our next meeting. Carried.

It was moved and seconded that the Secretary be exempt from all dues. Carried.

After the general order of business came the report on colleges. Dr. Reynolds, chairman of the committee, gave the following information:—

The Wattles Veterinary College and the Kansas City University Veterinary College, of Kansas City; Indiana Veterinary College, and the Veterinary College at Grand Rapids, Michigan, are not of very high standing, and graduates of these colleges should not be invited to the membership of our Association. Graduates from the following veterinary colleges ought to be invited to membership in our Association: Kansas City Veterinary College, Iowa State College, Chicago Veterinary College, McKillip Veterinary College, Ontario Veterinary College, Ohio State University, University of Pennsylvania, Cornell College, New York-American Veterinary College and any other reputable college.

Dr. Ward, also a member of the Committee on Colleges, gave the following report: All graduates who pass the Minnesota State Veterinary Examining Board should be invited to become members of our Association. Rejected. Dr. Reynolds' report was adopted.

It was moved and seconded that Dr. Ward, for submitting such a report, should present the Association with a box of cigars. Carried.

In a very short space of time all members, except Dr. Lyford, who despises the Havana as he does the quack, were enjoying the hospitality of Dr. Ward.

Committees on Bacteriology and Infectious Diseases had no reports to offer.

Dr. J. P. Foster, Chairman, Committee on Surgery, was not

present, but instead of sending a report on surgery, sent a report of one of his surgical cases, which was read by the Secretary, and it is published in this number of the REVIEW in the department of "Reports of Cases."

Dr. Lyford gave a report for the Committee on Empirics and Legislation. From his experience in the last few months, Dr. Lyford has arrived at a few conclusions: that convictions against illegal practitioners are hard to get, also that some changes should be made in our practice act at the next meeting of our Legislature.

Meeting adjourned until 8 p. m.

The evening session was devoted to papers and discussions. Dr. M. S. Whitcomb's paper on "Obstetrics"* opened up a great field for discussion, especially for the country members. Dr. Lyford's paper on "Hernia"* was the start to a very heated discussion. Dr. Price's unfinished paper on "Azoturia"* was truly an ably prepared document. In the near future, Dr. Price hopes to complete some experiments, which will enable him to finish his paper so the profession can have the benefit of his untiring energy.

The hour being late the meeting adjourned.

At 9 A. M., July 15, the members of the Association were invited to a very interesting clinic held at Dr. Peter's infirmary. Clinic number one was a sorrel filly, two years old, very much emaciated. It had been ailing about four weeks, but never lost a meal. She came from a farm where fifteen horses had died in the last three years. The owner permitted us to destroy the animal for post-mortem. The post-mortem revealed swamp fever. Clinic number two was a bay mare, eight years old, lame in right fore limb. Dr. Hay had a suspicion it was due to navicular arthritis. A hypodermic of cocaine nearly obliterated all trace of lameness. Clinic number three was a bay colt, three years old. It was lame in the left hind limb. Diagnosis, spavin. Clinic number four was a bay mare, eleven years old. It was lame in the left hind limb. It took lame in March. There was such a diversified opinion that no conclusion was reached. Clinic number five was a gray horse, four years old, with an enlargement about 6 x 10 inches in the left hypochondriac region. It was quite sensitive to the touch. It had been there about four months. Dr. Lees and Dr. Hay diagnosed a cartilaginous growth from injury to the cartilage of prolongation. Dr. T.

* Will be published in an early number of the REVIEW.

Lambrechts diagnosed a deep-seated abscess. Drs. Hay and Lees operated and confirmed Dr. T. Lambrechts' diagnosis.

The arrival of the dinner hour brought the convention to a close.

It afforded our members a great pleasure to have Dr. Holcomb, of the Bureau of Animal Industry, Washington, D. C., with us at our meeting.

J. G. ANNAND, *Secretary*.

NEW YORK STATE VETERINARY MEDICAL SOCIETY.

The fifteenth annual meeting will be held in Brooklyn, Tuesday, Wednesday and Thursday, Sept. 13, 14, and 15. Headquarters have been established at the Clarendon Hotel, Johnson, Fulton and Washington Streets, and the regular sessions will be held at the Assembly, 308 Fulton Street (close to the Hotel). The local Committee of Arrangements, consisting of Drs. W. F. Doyle (Chairman), Elishu Hanshew, C. E. Clayton, Robert W. Ellis, and Robert W. McCully, have perfected their plans so as to insure a splendid meeting from all points of view.

The programme as at present arranged is as follows :

PAPERS AND DISCUSSIONS.

"Rapid Method of Diagnosing Rabies," by V. A. Moore and Cassius Way, Ithaca, N. Y.

"Glanders," by H. D. Gill, New York City.

"Osteo-porosis," by Werner Runge, Newark, N. J.

(Subject not yet announced), by James Law, Ithaca.

"Molasses as a Food," by Pierre A. Fish, Ithaca.

"Intussusception in a Five-Months-Old Colt," by Clarence E. Shaw, Brooklyn.

"Treatment of Black-Leg," by A. K. Kellam, Ellicottville.

"Resection of Flexor Pedis Tendon for Infected Wounds of the Navicular Bursa," by W. L. Williams, Ithaca.

"Clinical Study of Anthrax in Cattle," by S. H. Burnett, Ithaca.

"The Physiology of the Rubber Horse-Shoe Pad," by Roscoe R. Bell, Brooklyn.

"Etiology and Morbid Anatomy of Diphtheria in Chickens," by W. B. Mack, Ithaca.

"Remarks on and Specimens of *Maladie du Coit*," by V. A. Moore, Ithaca, and W. H. Kelly, Albany.

(Title not announced), by R. A. McAuslin, Brooklyn.

SURGICAL AND MEDICAL CLINICS.

Quittor (Baer Method), W. L. Williams.

Quittor (Freck Method), W. F. Doyle.

Cryptorchid Castration, R. E. Waters.

Resection of the Flexor Pedis Perforans for Infected Navicular Bursa, W. L. Williams.

Plantar Neurectomy, R. W. McCully.

Median Neurectomy, C. E. Clayton.

Naso-Œsophageal Intubation, J. B. Hopper.

Peroneal Tenotomy for the Cure of Stringhalt, C. E. Shaw.

Oöphorectomy in Mare for the Relief of Nymphomania, J. E. Ryder.

A number of other operations, which cannot now be assigned, will be performed by the following surgeons: R. C. Reed, G. T. Stone, E. B. Ackerman, E. Hanshaw, F. F. Fehr, H. D. Gill, R. W. Ellis, J. L. Wilder, A. H. Ide, and others.

Surgical clinics for major operations will be conducted at Dr. Berns' infirmary, 74 Adams Street, at 8 P. M. Tuesday; 8 P. M. on Wednesday, and for general operations on Thursday from 9 A. M. to 1 P. M.

Medical clinic at Dr. E. Hanshaw's Infirmary, 125 Carlton Avenue, Wednesday, 8 A. M.

Reception and luncheon at 2 P. M., Thursday, at Schmitt's Hotel, Liberty, Fulton and High Streets, after which a trolley ride will be taken to Coney Island, where special arrangements have been made for the entertainment of the members of the Society and their friends. Special arrangements have been made to entertain the attending ladies.

Veterinarians from neighboring States are cordially invited to be present.

WM. HENRY KELLY, *Secretary*.

CONNECTICUT VETERINARY MEDICAL ASSOCIATION.

The semi-annual meeting was held at Waterbury, Tuesday, Aug. 2, 1903. The clinic was held from 11 A. M. to 3.30 P. M., at Dr. Thos. Bland's hospital. Many interesting cases were exhibited. Several operations, both major and minor, were performed. Prof. W. L. Williams, of New York State Veterinary College, assisted in several of the operations and demonstrated his method of operating, which was interesting and instructive to the veterinarians present. While the clinic was in progress

the Committee on Legislation met in Dr. Bland's office to discuss the framing of a bill to present to the Legislature. Dr. Wm. Herbert Lowe, of New Jersey, was present and kindly consented to help the committee, giving it much advice and many helpful suggestions, which he said he had learned from experience in getting the present law in his own State.

At 3.30 the veterinarians repaired to Hotel Connecticut, where an excellent dinner was enjoyed.

After dinner the meeting was held in the Business Men's Association rooms. President Dr. Bates called the meeting to order at 4.30 P. M. The following members responded to roll-call: Drs. E. C. Ross, Geo. H. Parkinson, Thomas Bland, M. Isaac, H. Whitney, H. E. Bates, J. H. Gardner, R. D. Martin, J. E. Underhill, L. B. Judson, G. T. Crowley, C. R. Witte, P. T. Keeley, F. A. Ingram, G. F. McGuire, J. F. Laden, F. F. Bushnell, G. W. Loveland, J. H. Kelley, R. P. Lyman, R. S. Todd, B. K. Dow. Visitors: Drs. G. E. Corwin, Lakeville; H. C. Balzer, Meriden; G. T. Elliott, Bristol; W. L. Fowler, Greenwich; J. S. Schofield, Greenwich; T. Thackaberry, New York City; T. F. Krey, New York City, and Dr. B. D. Pierce, Springfield, Mass.; Dr. T. E. Robinson, Westerly, R. I., Secretary of the Rhode Island Veterinary Medical Association; Dr. William Herbert Lowe, Paterson, N. J., President New Jersey State Veterinary Medical Association, also President State Board of Veterinary Medical Examiners, and Prof. W. L. Williams, of the New York State Veterinary College.

Minutes of the previous meeting were read and approved. Reports of the Secretary and the Treasurer were read and accepted.

The Board of Censors reported favorably on the applications of Drs. G. E. Corwin, Jr., H. C. Balzer, G. T. Elliott and C. L. Adams.

It was voted to instruct the Secretary to cast one vote for the applicants. The Secretary then cast one vote, electing the above named veterinarians to membership in the Association.

The Secretary read the following applications for membership: W. L. Fowler, V. S., Greenwich, Conn., graduate New York College of Veterinary Surgeons, '98, vouchers Drs. J. S. Schofield and R. D. Martin; J. S. Schofield, V. S., Greenwich, Conn., graduate Ontario Veterinary College, '90, vouchers Drs. Thos. Bland and B. K. Dow.

The applications were referred to the Board of Censors for their action.

The Chairman of the Committee on Legislation reported that the committee had drafted a bill, which he read. The Chairman said the committee did not consider the bill as perfect or complete in all its details, but that it would serve as a framework for a bill, such as the members might approve of. Several clauses of the purposed law were freely discussed by the members, but no action was taken, the matter being left with the committee.

Dr. Wm. Herbert Lowe addressed the meeting, giving many useful and valuable hints in regard to the proposed law for veterinary registration in Connecticut. He wished the members success in their efforts in getting their bill through the Legislature, and said they should not stop work as soon as a law to register veterinarians was enacted, but should continue to labor for still better lawful recognition. He earnestly urged the members to work hard to educate the people as to what the veterinarian's proper sphere was among them, not simply a "horse doctor," but "scientists" in the true sense of all that that pertains to regarding the veterinary profession. He also asked the members, as individuals, to work for higher and broader education along the lines of sanitary science as well as theoretical and practical veterinary medicine.

Prof. W. L. Williams made a short address explaining the educational qualifications required of veterinarians in the State of New York before they could receive a license to practice. He admonished the doctors present to always deal honorably by their clients, never to practice any of the principles of quackery, and try to teach our patrons that we were working for their interests as well as our own. This would go a long way in a short time, he said, in convincing the public that the veterinary profession is composed of educated men which they can employ and trust.

Dr. B. D. Pierce made a few remarks along the line of attending veterinary association meetings. He explained the importance of attending such meetings, the benefit one always gets, and the encouragement he can give by being present.

A vote of thanks was tendered Prof. Williams for his demonstrations at the clinic, to Dr. Lowe for his advice and assistance given the Committee on Legislation; also to Dr. Bland for arranging the excellent clinic and the hospitality extended the members at this meeting.

Dr. Bland spoke of the lack of time for the work of the meeting, also that for the past two years more work had to be

done than time would permit; he thought more time must be provided for the meetings in the future, and made a motion that a day and an evening be devoted to future meetings and more time given to discussion of business and papers. Seconded and carried.

Visiting veterinarians thanked the members for their courtesy and entertainment, and invited them to attend the coming meetings of their respective associations. Members of the American Veterinary Medical Association urged all who could to attend the annual meeting of that organization at St. Louis.

Dr. R. P. Lyman, in behalf of Dr. Colton and himself, invited the Association to hold its annual meeting at their hospital in Hartford. The meeting will be held the first Tuesday in February, 1905.

The Committee on Legislation will hold a committee meeting in Hartford in the fall, notice of which will be given later.

A detailed report of the clinic and records of the various operations performed will be given the REVIEW for publication later.

B. K. DOW, *Secretary*.

VETERINARY MEDICAL ASSOCIATION OF NEW JERSEY.

The semi-annual meeting was held at Stetter's Assembly Hall, 842 Broad St., Newark, on July 14th, 1904. In point of attendance and spirited discussion this meeting must rank as one of the best midsummer meetings ever held by the Association. During the session 65 were in attendance and 50 members of the profession were entertained at the 1 P. M. banquet.

The meeting convened at 10 A. M., and 45 members responded to roll-call. The reports of standing committees were made by the several chairman.

Drs. H. H. Butler, of Westfield; B. K. Baldwin, Newark; W. H. Lowe, Jr., Paterson; A. G. Hopper, Ridgewood; Samuel Christy, Elmer, and Chas. H. Perry, of Lakewood, were elected to membership.

The Treasurer reported a balance of \$91.86 in the treasury.

Dr. Budd spoke of the advantages accruing to the profession from the increasing popularity of horse shows. Drs. Budd, Vander Roest and English were appointed a committee to represent the Association at the various horse shows of the State.

Dr. Vander Roest read a paper on the use of "Tallianine"

in veterinary practice, and Dr. Pope presented the subject of anæsthesia in veterinary practice. Both subjects were discussed at length.

While some expressed themselves as pleased with the action of "Tallianine," the majority reported disappointing results.

The consensus of opinion pointed to the more extensive and scientific use of anæsthetics in veterinary practice.

After the dinner at 1 P. M. the meeting was reconvened for the transaction of unfinished business and at 3 P. M. was adjourned to Dr. Henry Vander Roest's hospital, where an interesting clinic had been arranged by a special committee, headed by Dr. James T. Glennon. Some features of the clinic were the siphoning of the stomach of the horse, neurectomy and cautery operations.

It was voted that the annual meeting in January, 1905, be held in Newark.

GEORGE W. POPE, *Secretary*.

ANSWERS TO CORRESPONDENTS.—*J. J. H., Wisconsin*: The article you refer to would require too much space, and it is not sufficiently popular; while a few may be interested in it, veterinary readers as a whole would care little for long dissertations on diseases of wild animals. . . . *F. P. J., New York*: The State Board of Veterinary Medical Examiners is composed of five members—G. H. Berns, Brooklyn, President; C. D. Morris, Binghamton, Secretary; Charles Cowie, Ogdensburg; W. L. Baker, Buffalo, and E. B. Ackerman, Brooklyn. . . . *M. M. P., New York*: The REVIEW will publish your paper as early as possible.

TO DRIVE AWAY FLIES.—The Kansas Agricultural College authorities have tried the following preparation upon their dairy herd, recommended by F. A. Marlatt: Fish oil, two quarts; crude carbolic oil, one pint; oil of pennyroyal, one ounce; oil of tar, ten ounces; kerosene, one quart. This preparation may be applied with a brush, cloth or atomizer, and will cause the flies to leave immediately. All of the ingredients, except kerosene, can be procured at the drug store, and will cost in the neighborhood of eighty-five cents per gallon. With the College herd of thirteen calves, they find that one gallon of this mixture will make from forty to forty-five applications, and a single application will keep the flies off from two to three days. This will make the cost about two cents per application, or about one-half to one cent per day per head.

NEWS AND ITEMS.

REVIEW readers are urgently requested to send in for publication personal items of news concerning themselves or their professional friends; legislation; extraordinary circumstances encountered in practice; or any news that is calculated to interest their fellow-readers. It is confidently believed that by a greater concert of action in this direction all will be benefited, and that this publication will thus be rendered a better medium of communication between its large family of professional readers. Its circulation is now much greater than was ever accorded to a veterinary publication in America, and it is the desire of the publishers to make it more acceptable with each issue.

DR. SAMUEL ATCHISON, of Brooklyn, N. Y., was married to Miss Sarah McCurdy, of the same city, on Aug. 17.

DR. A. LIAUTARD, of Paris, France, has been summering at Aux-les-Bains.

DR. LEONARD PEARSON is understood to be studying tuberculosis in Italy during his Summer vacation.

DR. E. M. RANCK, of Natchez, Miss., reports practice as good, and says that properly educated and practical veterinarians will find a good field in the South.

G. HOWARD DAVISON, D. V. S., of Millbrook, N. Y., has been prominently mentioned for the vacant position of Assistant Secretary of Agriculture for the United States.

DR. TSUNO, who represented the Japanese Government at the St. Louis meeting of the A. V. M. A., narrated the fact that the National Veterinary Association of his country has a membership of over one thousand.

DR. J. G. RUTHERFORD, Veterinary Director-General of Canada, has ordered destroyed, about two hundred horses affected with *maladie du coit*, which his officers have quarantined in the North West.

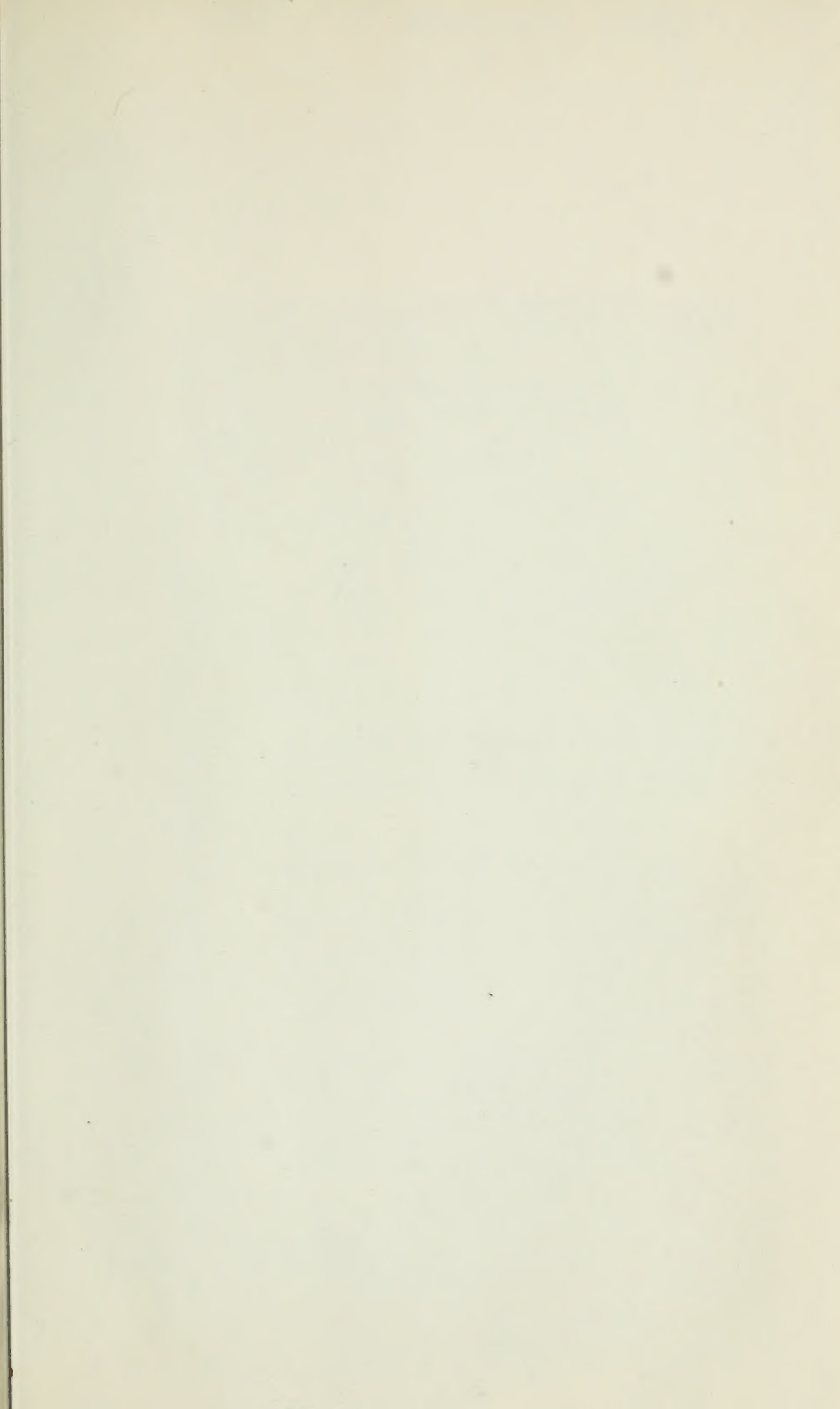
DR. M. H. REYNOLDS, of Minnesota, reports that the new Live Stock Sanitary Board is doing excellent work, the appropriation is yearly becoming larger, and the executive affairs of the Board are in the hands of veterinarians.

DRS. W. L. WILLIAMS, of New York; Wm. Herbert Lowe, of New Jersey, and Benj. D. Pierce, of Massachusetts, attended the annual meeting of the Connecticut Veterinary Medical Association, at Watertown, Aug. 2.

A VETERINARY SURGEON NEEDED.—The amateur automobilist tries to go through a ten-mile-ordinance town at the

rate of forty miles an hour. At the intersection of the main streets he whirls into a collection of cables, chains, fence-posts, and other barriers. He is dug out of the wreck and carried into the first doctor's office his rescuers see. "I can't do anything for this man," says the doctor. "I'm a veterinary surgeon." "You're the right man, doc.," moans the amateur automobilist. "I was a jackass to think I could run that machine."

THE POWER TO PROSECUTE IN NEW JERSEY.—The New Jersey State Board of Veterinary Medical Examiners has issued the following circular letter to members of the profession in that State in reference to the prosecution of violators of the laws governing the practice of veterinary medicine: "*Dear Doctor* :—A large number of the veterinary practitioners of this State believe that the enforcement of the penalties of 'An Act to regulate the practice of veterinary medicine, surgery and dentistry in the State of New Jersey, to license veterinarians and to punish persons violating the provisions thereof,' approved March 17, 1902 (Chapter 18, Laws 1902) devolves upon the State Board of Veterinary Medical Examiners. It seems proper to state at this time that such is not the case. *The enforcement of this law belongs to the court officials in the respective counties in which the violations take place*, notwithstanding the fact that the statute makes it lawful for the State Board of Veterinary Medical Examiners to institute *civil* proceedings in any court of competent jurisdiction against any person, company or association for the violation of any of the provisions of the act. *The Veterinary Act makes it the duty of district attorneys to prosecute violators of said act.* The State Board of Veterinary Medical Examiners is desirous of acting in conjunction with the respective district attorneys of the counties of this State in enforcing the law in all cases where sufficient evidence can be procured to bring about a conviction. The law is ample to secure the conviction of offenders, but in order to do this your coöperation is earnestly requested. It will be very much appreciated if you will furnish the Board with the necessary data in any case of infraction of the law that may occur within your cognizance. It should not be forgotten that the evidence must be of such a character as will give reasonable assurance of furnishing a true bill from the Grand Jury, and we would suggest that affidavits be obtained from at least two witnesses in each case in order to avoid the common annoyance of bringing suit on oral evidence, *such evidence being afterwards denied or modified before the Grand Jury.*"



BINDING SECT. APR 5 1966

SF
601
A5
v.28
pt.2
cop.2

American Veterinary Medical
Association Journal

PLEASE DO NOT REMOVE
CARDS OR SLIPS FROM THIS POCKET

UNIVERSITY OF TORONTO LIBRARY

STORAGE

